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**THE JOURNAL OF PHILOSOPHY**  
**PSYCHOLOGY AND SCIENTIFIC METHODS**



**THE JOURNAL OF PHILOSOPHY**

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**PSYCHOLOGY**

AND

**SCIENTIFIC METHODS**

EDITED BY

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# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE DECEPTION OF THE SENSES

IN current controversies it is often assumed that the deception of the senses affords an *experimentum crucis* to test the validity of different theories of knowledge. This assumption appears to me to be unwarranted, and I offer, therefore, the following comments in support and illustration of this contention. The first section expresses in general form what I have to say. The other sections are little more than restatements and are added in the interest of varied illustrations rather than as sections in a progressive argument. Altogether they constitute a defense of two positions: (1) that the deception of the senses is significant not for cognition, but for action; and (2) that speculative theories of knowledge are, and are from the nature of the case, independent of any empirical evidence to be derived from the fact that the senses deceive.<sup>1</sup>

#### I

If the deception of the senses is taken to be a fact, then we must obviously keep that fact genuine and unequivocal throughout our inquiry. We can not profitably admit the fact, use it as evidence for a theory of knowledge, and then use this theory to discredit the fact or to alter the character which it had as evidence. For we have not used the deception of the senses as a *supposed* fact which a *re-*

<sup>1</sup>I am aware that arguments are drawn from other facts of perception, such as dreams, hallucinations, after-images, etc., to reinforce the evidence which the deception of the senses is supposed to afford. These facts have not been overlooked, but they are not here considered. I have found nothing in them as yet which modifies in any important way the position here taken. I wish to remark also that the abnormal is often given weight altogether disproportionate to our knowledge of it. The things we know less about should not set a standard for construing the things about which we know more. When we have discovered, for instance, *why* we dream any *specific* dream, with as much clearness and certainty as now marks our discovery of *why* the straight stick appears bent, then we can use dreams as unambiguously in evidence for such positions as they may support.

*ductio ad absurdum* might overthrow; we have used it as an *evidential* fact which loses its evidential character the moment it is discredited or altered. In other words, if a theory of knowledge is to be proved or disproved by the deception of the senses, that theory can not determine the nature or character of the facts of that deception. Yet there are arguments offered to our consideration which appear like attempts to disprove one theory of knowledge and to prove a contrary theory by appealing to the deception of the senses, and then, on the basis of the theory thus proven, apparently proceed to explain that the deception is not genuine, that it is only a quasi-deception, that the difficulties connected with it consequently vanish. Such arguments are not convincing. If the deception of the senses is to be an evidential fact, it must be a genuine fact *and genuine in the same way*, both in the theory which it disproves and in the theory which it proves.

A common illustration may be used to put this consideration in concrete form. If my eyes deceive me because I see as bent a stick which is really straight, I may conclude that I do not see the stick as it really is; but I ought not to go on and say that the stick as it really is is, strictly, neither straight nor bent, that, as it *really* is, it is something quite different. If I see as bent a stick which is really straight, I must conclude that I do not see the stick as it really is, *if I mean by "really," "straight"*; for, assuredly, if I see it bent, I do not see it straight. I may also hold that the stick *as it really is* is, strictly, neither straight nor bent, but my reason for so holding can not possibly be the fact that I see as bent a stick which is really straight. It must be a totally different reason. In general terms, once more, I can not pass from an empirical distinction which is taken to be precisely what it appears to be to a speculative distinction which is totally different. I can not use one distinction between appearance and reality as evidence of or in illustration of a totally different distinction between appearance and reality. If the stick is really neither straight nor bent, then its appearance as bent is not the appearance of a stick which is really straight.

Consequently it seems evident, if the deception of the senses is to have any evidential force, that the senses must deceive us in the way and in the respect they do deceive us. If I hold, for instance, that my senses deceive me because through them things appear to me to be distorted, then that is the way in which they do deceive me. But if this is so, then the things must be the undistorted originals which appear through my senses to be distorted. Otherwise it means nothing to say that they appear to me to be distorted. Thus if my eyes deceive me because through them a straight stick appears bent, then it must be a straight stick which so appears. Otherwise what

would it mean to say that I see a straight stick bent? If the stick is not straight how could my vision of it be a distorted vision? It seems clear, therefore, that, if the senses deceive me, the things in respect to which they deceive me must be themselves of the character in regard to which I am deceived. The distinction between appearance and reality, therefore, in so far as it is defined in terms of the deception of the senses, implies that the character of appearance and the character of reality are comparable and commensurable in the same terms.

In what, however, does the deception of the senses consist? It evidently does not consist in any distortion of reality if by that we mean that reality appears to us in ways in which it ought not to appear. The way in which things appear to us is the natural result of discoverable conditions. Reasons are found for it and these reasons exclude the possibility of another way of appearing. We can not say, therefore, that the senses deceive us because they represent to us things in a way in which they ought not to represent them. That is, there is no deception *in* the way things appear to us, *in* the appearances. The appearances deceive us, not by being what they should not be, but by leading us to do what we should not do,—to think that reality is what it is not or to use things as if they were not what they are.

Since the senses do not of themselves reveal to us why things appear to us as they do, and since things appear different under different conditions, it is natural that we should be led into error so long as we are ignorant of the reasons why things so appear. But it is evident that we should not be led into error *if we did not react to things as they appear to us*. There is thus no cognitive character whatever in the appearance of things to us, and consequently no cognitive adequacy or inadequacy in what we see, hear, touch, smell, or taste. The senses are then not deceitful, although *we* may be deceived by them just as we may be deceived by the absolute candor of a statement. Not only are the senses not deceitful, but they would be so if by their means things did not appear to us as they do, provided, of course, that the conditions under which things appear remain unchanged. Naturally we can not entertain the supposition here implied, because we are so well assured that if things appeared to us different from what they now do, the conditions of their appearance would be different from what they now are. Yet we may imagine into what hopeless confusion of action we should be plunged if things always appeared the same while the conditions of their appearance constantly changed.

It seems evident, therefore, that the appearances of things are in no sense cognitive, but that cognition arises only as we react to these



appearances. The deception of the senses is significant, then, not for cognition, but for action. To see a straight stick bent is not to see erroneously. Such a sight could never lead us into error if we never reacted to it as if we were seeing a bent stick. A fisherman's spear does not err, for the fish does not appear to it. The fisherman may err, not because the fish appears to him, but because he does not allow for the water. Thus it is the reacting to appearances which leads to knowledge, and furthermore, this reacting must be of a specific kind. It must be what we call conscious reacting and this type of reacting has never been successfully reduced to the fact of appearance itself.

These considerations seem to me to be quite sufficient to warrant the conclusion that the deception of the senses is a trivial matter in any theory of knowledge. But the distinction between appearance and reality may not be a trivial matter in the theories of knowledge which I have called speculative. If I read these theories aright, I discover that they do not begin with the distinction between appearance and reality, but conclude with it. They do not appeal to 'straight sticks which look bent as evidence. It is only by inadvertence that they seem to rely on such facts of experience, and they frequently profess to discard such reliance altogether. Their procedure is quite different. They ask you to consider not what you mean when you say that a stick which is really straight looks bent,—for they are, I take it, quite willing to admit that you mean then something for action and not for cognition—but they ask what you mean when you say that a stick or any other supposedly isolable fact of experience is *real*. In other words they ask, What is it *to be real*? And they insist that no fact of experience can measure up to the standard set by the answer to that question. They then conclude that the facts of experience are appearance and not reality.

Such speculative theories exist. It is their procedure, standing as it does in such marked contrast to experimental procedure, that makes them impressive and challenges attention. They do not claim that the facts of experience are not strictly reality, on the ground that the senses deceive, because the deception of the senses is itself a fact of experience, to be characterized as appearance as much as any other fact. They ask of it as of all others, Can it be consistently construed in terms of what it is to be real? And they answer, No. If such is their procedure then it is evident that the other position I urge in this paper is sound, namely, that speculative theories of knowledge are, and are from the nature of the case, independent of any empirical evidence to be derived from the fact that the senses deceive.<sup>2</sup>

<sup>2</sup> The difficulty I find with these theories lies, as I have pointed out else-

## II

There is an argument which runs somewhat as follows: If the senses deceive us, then we do not perceive things as they are; we perceive something else, their appearances, representations or images of them; now, since the things can not be the representations, nor the representations the things, there are two regions of existence, things and representations, reality and appearance, which, from the nature of the case, can not be bridged by perception; we need, therefore, a theory of knowledge which will give us some insight into this distinction between appearance and reality, and show how knowledge is possible in view of it.

But what is the initial antithesis between appearance and reality? Is it between a bent stick and a straight stick, the former being appearance and the latter reality? If so, what is there to make clearer and what demand is there here for a theory of knowledge? If we want to know why the stick is straight, is not the answer because it conforms to the definition of a straight stick, is what a straight stick is, and does what a straight stick does even to appearing sometimes bent? If we want to know why it appears bent and not straight, is not the answer water? Is not the case now disposed of? It is water which makes the straight stick appear bent, *but not the eyes*. The senses deceive us because, not revealing the causes why things appear as they do, we are led astray. The moment we discover that it is water which makes the stick appear bent, we can allow for the refraction and be satisfied. But this is not a matter of epistemology, but of action, of stimulus and response. If, however, the antithesis between appearance and reality is not the initial antithesis between the bent stick and the straight stick generalized, but a totally different antithesis, we must be told what it is. And clearly, whatever it is, it can have nothing to do with the deception of the senses, for no specific case of that deception falls under it.

But, it may be asked, how can we escape the conclusion that we perceive not things, but only their appearances? The problem is not how may the conclusion be escaped, but whether it has any meaning for a theory of knowledge. It is too generally taken for granted that we know what it means—that there are things and there are appearances of them, that the things and their appearances are different, and that *this is a knowledge or a representative difference*. It is too uncritically assumed that the bent stick is the means of knowing the straight stick, or that the former is a representation of the latter.

Now there seems to be no evidence for this assumption. Seeing the stick bent is not a means of knowing that it is straight, nor is the where, not in the consistency of their procedure, but in their credibility. See "The Problem of Consciousness" in the Garman Commemorative Volume.

stick seen bent a representation of the straight stick. It is not the first, evidently, for it is absurd to say that we know a stick is straight by seeing it bent,—that we know that reality is reality by perceiving that it is appearance. It is not the second, evidently, for the bent stick does not represent the straight stick cognitively, is not a substitute for it, is not something different from it, is not a picture of it. If there is representation in the case it is of the fact that a stick which looks bent in one set of conditions may look straight in another set. One has only to thrust his walking-stick into the water to be assured that what he now sees is not a picture, a copy, “idea,” or representation of his stick, because he knows he is looking at his stick and not a picture of it. Consequently we again approach the conclusion that the deception of the senses has nothing to do with a theory of knowledge, since it has nothing to do with knowledge or representation. Consequently, also, we are under no obligation to escape the conclusion that we perceive not things, but only their appearances, and under no obligation to subscribe to it. The difficulties attending the attempt to escape or to subscribe are artificial difficulties. They are not *real* difficulties, but only *apparent* ones.

It has already been pointed out that the senses deceive us, not because of any defect in the senses or in the appearances of things to us, but because of a defect in action. Briefly the stick seen bent may lead us to act as if it were seen straight. In no intelligible sense can we claim that the stick ought to be seen straight if our senses are not to deceive us. How, we may ask, ought a straight stick in the water to appear if it is really a straight stick? Ought it to appear straight or bent? If it appeared straight, it is clear enough that our senses would then deceive us by letting the stick appear as it ought not to appear. But that is not the way in which they deceive us. They let things appear as they ought to appear and that fact is no small item in our happiness. Again; if we never acted, if we did nothing in response to the appearance of things to us, we should never be deceived by our senses. It is evident, therefore, that we are deceived not because the appearances of things are not cognitively or representatively adequate,—there being no cognition or representation involved—but because the appearance of things to us is not alone sufficient to enable us to react effectively. If it were, not only would the senses never deceive us, but we should have no use for consciousness or knowledge.

### III

Yet it may be urged again that in spite of all that has been said we have, none the less, appearances or images on our hands and these are not the things which appear or of which we have images. “It is



evident the mind knows not things immediately, but only by the intervention of the ideas it has of them." Any one who denies this is refuted by the evidence of the deception of the senses. Thus that deception does imply an epistemology. To overlook the implication is to assume a theory of knowledge without making the assumption explicit.

This seems to be only a restatement of positions already considered; and what has been already said applies to it. Let us admit that there are any number of appearances or images or ideas, the evidence goes to show that they are not cognitive or cognitively representative. They are stimuli to thinking and doing—to action—and it is not in having them, but in reacting to them, that knowledge comes into play. They are not the means by which we know, they are items with which our knowing deals. Our knowledge, so far as they are concerned, consists, not of them, but of propositions about them. The appearance of a straight stick bent in the water is not knowledge at all. Knowledge exists only when we are able to say that the straight stick appears bent because of the water. We should, doubtless, not say this if we did not see the stick bent, but only because the fact for which we are seeking a cause would not then be an object of our inquiry. Moreover, we make the inquiry because we are radically convinced that appearances are what they ought to be, and that, consequently, if we err, the cause of our erring is not due to any defect in them, but to our own ignorance.

It may be urged, however, that such considerations are inadequate and really avoid the issue. They may be adequate so long as we don't make the distinction itself between appearance and reality an object of inquiry. We may admit, that is, that appearance is not knowledge and has as a stimulus to action no cognitive significance. But we can, notwithstanding, ask, what is the reality which appears? The moment we ask that question we come upon a case of knowledge for which the distinction between appearance and reality is crucial. Indeed we come *only then* upon a theory of knowledge in the strict and philosophical senses. A theory of knowledge in the philosophical sense is something different from a theory of knowledge in a logical, scientific, or pragmatic sense.

If this is so, we have certainly made an important advance in our analysis of problems. It is a step forward to recognize that a philosophical theory of knowledge is something quite different from a logical, scientific, or pragmatic theory. It is a step out of ambiguity into clearness. There are those who would say that, while this may be so, it is a step not worth while, for it is a step in the direction of frivolity and visionary speculation. But what they say can have force only if philosophy turns out to be frivolous and visionary. Cer-

tainly philosophy ought not to be discredited at the start. We may leave the question of its value untouched and still insist that the deception of the senses has no bearing upon a theory of knowledge which is professedly not empirical. In such a theory we are dealing with a unique kind of knowledge which we may call theoretical or speculative, but which is not the kind of knowledge with which action, science, and affairs are concerned. It is difficult to see, therefore, how the deception of the senses, which is a matter of action, science, and affairs, can have any bearing upon a philosophical theory of knowledge as it has just now been defined.

In other words, our contention now takes this shape: Granted that the distinction between appearance and reality, as just that distinction and no other, is a distinction which now raises the problem of the knowledge of reality as reality in distinction from the knowledge of appearance as appearance,—granted this, we may still insist that the distinction as thus construed is not, whatever else it may be, the distinction between appearance and reality involved in the deception of the senses. It is another and a different distinction, and, at present, we need not be at all concerned with just what it is. In support of this contention all that has been already said might be repeated. In what follows, it is repeated, but in a different form in the interest of clearness and reinforcement.

#### IV

It is a variation on the theme of the deception of the senses to point out the fact that the same thing may appear in contradictory fashion to different observers at the same time and to the same observer at different times. This fact may raise the question, What then is the thing?<sup>3</sup> It can not very well be all of its contradictory appearances combined *and it can not very well be any one of them exclusively*. When we take them one by one, *each has as much right to be the thing as any other*. This is so undeniably true that writers who suspect that it is denied are filled with amazement.

But to what is its truth relevant? As simply true all by itself there is little in it to stimulate thought. The truth must be put into a context in order to move on. If, for instance, some one now goes on to say: Since the truth is as you have admitted, then "things" have no *originally objective* existence as set over against us; they are not ready-made things-in-themselves which affect us and with which we deal; they are *objective* in the Kantian sense, let us say; they are the

<sup>3</sup> I do not think it does raise the question legitimately, because if we do not know what "the same thing is" which "appears different," we can not identify the fact we are investigating. Our question is not, What is the thing, but why does it appear different.



objective of their varied appearances. Here certainly we have a theory of knowledge. Now we may readily admit that what such a theory says about the objectivity of things—that they are not things-in-themselves—is true, but we can not admit that the reason for its truth is the reason that has been here assigned, namely, that a thing can not be all of its appearances combined or any one of them exclusively. It will be the different reason—and more in accord with the Kantian philosophy—that appearance has nothing to do with knowledge. We should claim with him that *the* theory of knowledge is not an empirical theory based on observing the variations and sequences of phenomena.

To appeal to experience is to invite experience to declare itself on the matter appealed to, and here experience declares emphatically that while a thing can not be all of its appearances combined or any one of them exclusively—simply because it never is—*it is every one of them in every instance which can be defined*. Was it not admitted that the same thing appears different to different observers at the same time, and to the same observers at different times? Was it not admitted that this is a plain fact of experience? Was it not also admitted that to identify the thing with all of its appearances at once or with any one of them exclusively is a plain impossibility? But now can these admissions have any force if the thing is not always what it appears to be when and to whatever observer? If a straight stick which appears bent is not a straight stick which appears bent, what is it?

But some one may say, You have passed from “appears” to “is” without any warrant whatever; you can not affirm—and you have admitted that you can not—that the stick which *appears* bent *is* bent. In reply we urge again that the transition from “appears” to “is” in cases like this is not a cognitive transition. But we may again vary the reply. Some sticks *appear* bent which *are* bent. Some *appear* bent which *are not* bent. In the first case we may say that the sticks are what they appear to be, but in the second we may not say this. But why? Because it is false. But it is false *not because there is any error in the appearance*, for the sticks appear precisely as they must appear, *if the conditions of their appearance are genuinely what we take them to be and if they are straight*. Otherwise there is no meaning in saying that straight sticks appear bent. The difference between our two cases is, therefore, a difference which does not imply any error in the appearance or any ambiguity in the reality. The difference is of a totally different sort. In other words if we leave out action—thinking or doing—we have no distinction between appearance and reality in these cases and we must reduce our second case to a simple tautology: a straight stick appearing bent is

precisely a straight stick appearing bent—or a straight stick in the water is precisely a straight stick in the water—and the stick is thus precisely what it appears to be. *To just such tautologies, knowledge, when it is attained, reduces the distinction (for action) between appearance and reality.*

## V

In conclusion I wish to point out an assumption which is often made in discussions about appearance and reality, and which, to my mind, is the principal thing which may lead some readers to think that what I have said is not only unconvincing, but irrelevant. I shall approach it by using a specific instance, not the stick this time, which I abandon with regret, but the circle.<sup>4</sup>

A circle appears different to different observers differently situated. It may appear, to use a common mode of expressing it, as any one of a series of appearances varying from a line through ellipses of varying diameters until the circle appears again as a line. These appearances may be graphically pictured to any desired number. Now let us suppose that ten observers are given in different situations, then it is evident that the circle will appear ten times conformably to the ten situations. But over and above this evident fact *it is assumed that there will then be ten different shapes which are existentially separate and distinct from one another, and of which each is existentially separate and distinct from the circle itself.* That is, if the circle appears to one observer as a flat ellipse, then it is assumed that the *appearance* is itself a flat ellipse.<sup>5</sup> What these shapes are in their essence, where put them, what to do with them when they are put there, how explain their relations and connections with one another and with the circle—here are problems to tax all our ingenuity, and problems on which no experiment or no fact of experience can throw any light. To affirm that if a circle appears elliptical, then its elliptical appearance is an ellipse, is not to state a fact, it is to make an assumption which condenses whole volumes of speculative philosophy and psychology into a single sentence.

<sup>4</sup> I have stuck to the stick because it is handy. It should be evident, however, that other current examples would have done just as well; the whistle, the sound of which *must* be heard later than its puff of steam is seen, the vanished star which *must* still appear in the sky, etc. The star had peculiar claims for its use instead of the stick, because some writers seem to have overlooked the fact that it would be very difficult for a vanished star to appear *as a vanished star*.

<sup>5</sup> Perhaps I ought to have stuck to the stick and said that it is assumed, if a straight stick appears bent, that the appearance is itself a bent stick! Let me add also that, following the illustration of the text, we have now two geometrical figures instead of one. Yet it is to be observed that the properties of the second figure, *although it is an ellipse*, are *demonstrably* the same as the properties of the first figure, *although it is a circle*.

It is not my intention to discuss here the merits of this assumption, but rather to call renewed attention to it. I have stated it crudely because more refined statements of it tend, in my opinion, to obscure rather than clarify it. We gain nothing by calling these shapes "images," "mental processes," "sensations," "ideas," etc. We undoubtedly affirm that things appear in various ways and, so affirming, call attention to an interesting and analyzable fact. But to convert this fact into an assumption of an order of existences which are "mental" or "psychical" and which, none the less, have qualities, intensities, space and time characters, and also laws of succession and coherence, is to make an assumption which is not self-evident, but which demands the most careful scrutiny and the most unequivocal evidence.

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## THE ESSENTIALS OF A FIRST COURSE IN ETHICS<sup>1</sup>

TWO things a first course in ethics should do for college students. It should give a fairly adequate survey of the field of ethical discussion, and present a fairly consistent program of procedure when face to face with actual ethical problems. The former is historical, the latter constructive.

With my own students, juniors and seniors who have usually had no previous training in philosophy, I obtain the first result by means of an epitomized history of philosophy, lasting nine or ten weeks, three hours a week. Naturally, I select only the more important thinkers, and with each stress the ethical contribution, although the systems in their main features are also considered.

Among the Greeks, I choose Socrates, Plato, Aristotle, the Stoics, and the Epicureans, and give in brief form their respective world-views and attitudes toward ethical problems. The Greco-Roman period I treat rather sketchily, but point out, as clearly as possible, the amalgamation of Greek and Jewish thought, the somewhat later amalgamation of Greek and Christian thought, and add a brief presentation of Neoplatonism. But two or three lectures are then needed to transport the students to the period of modern philosophy, where I select Descartes, Spinoza, Leibnitz sometimes, Hobbes, the British Moralists (but only with reference to their treatment of conscience), Kant, Fichte, and Hegel briefly, John Stuart Mill, and Herbert Spencer.

<sup>1</sup>Read at the annual meeting of the Western Philosophical Association at Chicago, April 5, 1912.



The reference work throughout this part of the course is confined in the main to the sources. Jowett's "Plato," Welldon's "Aristotle's Ethics," Bakewell's "Selections," and Rand's "The Classical Moralists" and "Modern Classical Philosophers" furnish material enough. Only when I have finished discussing a period and feel that the students have obtained some knowledge of the sources do I suggest the use of handbooks of philosophy and of various expository and critical works. To know the leading men themselves at first hand is of more value than to become saturated with the interpretations of less vigorous thinkers.

In consequence of such a study which, of course, for some purposes would be all too brief, students have certain things fairly well in mind. They know how the term "philosophy" has been used, in a general way what "metaphysics" means, the relation which has obtained in the systems of the greatest thinkers between ethics and psychology, and between ethics and the political and social sciences; they know, too, how man has been regarded by these writers, and how such interpretations of man have colored ethical theorizing. They also know what rationalism and hedonism have meant in both the ancient and modern worlds, the relation of a man's thought to the age in which he lived, and the incorporation of earlier thought into the later systems. They know, further, the historical relation of Christianity to the course of philosophical thought, and appreciate somewhat the increasing complexity of life and theory with the accumulating centuries. They also know, and this I regard as very important, the opposition between idealism and Democriteanism in the ancient world, the almost complete neglect of Democritus for more than a thousand years, and then the introduction of the Democritan world-view into modern Europe about the year 1600, which became the general metaphysical background for the developing sciences, and at the same time the opponent of that idealism with which Christian thought and culture had been allied since the early centuries. Not to have this in mind is to get oneself lost in a miasmatic intellectual fog-bank where anything may or may not be true.

If we take up now the constructive phase of the problem, my solution consists in as complete a treatment as possible of a half dozen main topics, viz., The Method of Ethics, The Field of Ethics, Different Planes of Ethical Living, The Criteria of Moral Progress, The Ethical Ideal, and The Realization of the Ideal. The discussion of these topics in their larger aspects is arranged in chapters with rather full bibliography, mimeographed, and placed in the hands of the students. I generally have thirteen or fourteen weeks, three hours a week, for this part of the work.

In considering the method of ethics, I dwell on the fact that in

the past many methods have been used to reach truth, and that the results have been exceedingly varied. In striking contrast is the scientific method which has been applied in numerous fields with valuable results. The implication that the same method will be equally valuable when applied to ethics is very strong.

This leads to the consideration of a general world-view. The historical study has shown, under my manipulation at any rate, that the great systems of thought have been correlated more or less closely with the ages in which they took shape. They are consequently regarded as comparatively discrete units. Of course, the later systems show traces of the earlier ones, as indicated above, but each was an attempt to give a fairly consistent world-view upon the basis of what was known, or regarded as most valuable, at the time. Taking this as my cue, I suggest to my classes that the general evolutionary view is an attempt in recent years to present a fairly satisfactory world-view upon the basis of what we know to-day, or think we know, as the result of long-continued scientific investigations. Evolutionary theory, it is true, is not very stable. For the sake of definiteness, however, I deem it advisable to make a selection. As between the necessary development of the Absolute given by Hegel and the cosmic view of Spencer, I choose the latter, which in form is hypothetical and in harmony at least with the spirit of scientific research.

This general scientific attitude involves, among other things, the scientific view of man, which I frankly accept. I see no good reason why we should not make an independent study of man to-day, and make that basal in our interpretation of men's relations to one another, than that Plato or Aristotle should have made such a study in their day. But such an attitude is far-reaching. It is said that Spencer was the first to suggest an evolution of the soul parallel with the evolution of the physical self.<sup>2</sup> If one accepts this, and it seems to go along with the general theory of evolution, then one is on the opposite side of the fence from Plato and Aristotle and those who have been especially influenced by their views. This cuts wide and deep, and is too little appreciated.

In connection with the field of ethics, I discuss the relation of ethics to the other fields of thought, especially psychology, sociology, and religion. The relation to psychology raises the question of the *kind* of psychology, and the answer that I find is "experimental psychology." That is, of course, recent, and there is much as yet undetermined. But the relation of ethics as a variable, dependent upon scientific psychology, itself a variable, is, to my mind, preferable to any static relation.

<sup>2</sup> Spencer, "Principles of Psychology," Vol. I., Pt. II., Chap. II. Villa, "Contemporary Psychology," page 38.

To sociology, ethics sustains a vital relation, and through sociology to most of the other sciences. The real question is, What differentiates ethics from sociology? Most of my students have had no training in that field. I begin *ab ovo*. I point out that the desire for food and the relation between the sexes are the fundamental human impulses. Not a little selfishness is apparent in connection with both, but there is considerable evidence that altruism has a congenial soil in the latter. I then explain Giddings's<sup>3</sup> generalizations about the social population, the social mind, the social organization, and the social welfare. Ethics belongs in this last group. We can not, of course, say that all that is social is ethical, but we may say that all that is ethical is social. The altruistic motive differentiates. The test, by and large, is social welfare, one's own bound up with that of the group.

The relation of ethics to religion is provided for under the head of sociology, but because of the historically close connection between the two, I give my classes an extended discussion of this topic, and advocate the view that religion depends upon ethics, as maintained by Höffding.<sup>4</sup> The former conserves values, while the latter creates them. Very naturally, not all of the students accept this view with avidity.

Under the head of the different planes of ethical living, I discuss the opposition between the individual consciousness and the social consciousness. For the sake of definiteness and concreteness, I suggest an analysis of some town of four or five thousand people, using the topics "Social Population," "Social Organization," etc., as given above, and another familiar grouping of human activities into economic, political, moral and religious, and cultural. I generally go into the matter in detail, and find that my analysis tallies with that which the students make mentally of their own home towns. If a band of robbers should visit such a town, crack the bank safe and kill the night watchman, the social consciousness of practically the entire group would condemn the acts. If, however, a member of one of the churches which frowns upon dancing should attend a dancing party, that religious social consciousness would condemn, while another consciousness within the same community would approve. The individual, too, would exhibit an opposed consciousness to the group to which he belonged. The illustration is simple, but presents the essential phases of the topic.

Now in such a community, an individual might live wholly in harmony with the prevailing social consciousness, and be ethical to the extent that the group had appropriated valuable elements from

<sup>3</sup> Giddings, "Inductive Sociology."

<sup>4</sup> Höffding, "The Philosophy of Religion," pages 322-385.



the past. This would be similar to the normal behavior of any species of animals. Another individual by reason of travel, a college course, or other varied experiences, might attempt to work out some scheme of life for himself, but fail. Ultimately he makes the social consciousness his standard. He is on a somewhat higher plane than the first individual because he tried to rationalize his conduct. To try and fail is better than never to have tried. Outwardly his behavior is the same as that of the other individual. A third individual insists upon introducing into his own life some element which proves of value. He is imitated by the group and ultimately hailed as an ethical pioneer. This type I regard as higher than the others, but it is one which is liable to many perversions. There is risk involved, but it is the risk that bold, vigorous spirits do not shrink from.

In this connection I usually define ethics, somewhat loosely, as "The life of a man as he seeks to realize some ideal." The whole matter resolves itself into a struggle among ideals with the survival of the fittest.

Turning now to the problem of moral progress, I find it closely connected with the problem of social progress. Here I may apply no absolute criteria. I do emphasize, however, complexity and social control. In biology, complexity<sup>5</sup> of structure is the test of what is higher. Our modern civilization, therefore, may be regarded as higher than early savagery and barbarism, and perhaps than all other civilizations. Social control, also, suggests advance, just as the control of the adult is so interpreted when compared with the child. Giddings says,<sup>6</sup> "Race maintenance and evolution with diminishing cost of individual life, with increasing freedom, power, and happiness of the individual person . . . is progress." With such social progress, moral progress has been intimately concerned. Practically every step in social advance has involved opposition between the individual consciousness and the social consciousness. I may not say that all who have opposed themselves to the group have been moral heroes, but I can say that very many real ethical pioneers have been of this sort. Oftentimes there has been a retrograde movement advocated by the opponent of the social consciousness, and not infrequently such opponents have not been good guessers in regard to what would be for the welfare of the group, but the progress itself is traceable to such variation within the group.

The ethical ideal itself, the next topic, I regard as a fusion of the best elements selected from our own past experiences and the ex-

<sup>5</sup> Minot, "Age, Growth, and Death," page 154.

<sup>6</sup> Giddings, article on Sociology in "Lectures in Science, Philosophy, and Art," Columbia University Press, 1908.

periences of the race so far as history reveals them. In so far as the environment of two individuals is the same, will their ideals be approximately the same. Approximately the same temperament would also be a necessary factor. This seems to reduce the matter to a hopeless pluralism, but with the general extension of a high type of culture, some advance seems likely. Then, too, in so far as we may include in our ideal to-day any element cherished by barbarian or savage, will our ideal be theirs. Kindness to nearest kin seems to characterize very primitive people. We could hardly omit such an element from our ideal. To that extent, at least, does the savage have a stake in our ethical claim. The barbarian shows kindness even to strangers. To that extent the barbarian, too, shares our ideal, for we could hardly disregard hospitality. The same is true all along the line. Our ideal may be regarded as in part the ideal of all people, remote in time or place, in proportion as they might find in our ideal elements which they themselves approve.

Still further, in attempting to make the content of the ideal explicit, I view it both physically and psychically. Emphasizing as I do the relation of ethics to psychology, really physiological psychology, I could not fail to insist upon the ethical aspect of maintaining a good physical self. Problems of hygiene, both individual and social, race suicide, and all kindred matters find a place here. On the psychic side, I go back to Aristotle's list of ethical virtues, of which we would be apt to include the larger part in our ideal to-day. I also turn to the Hebrew and Jewish teaching, and suggest the incorporation of not a little that we find there, but in each case, whether Hebrew or Greek, the test is social welfare on the whole and in the long run. The matter is not absolutely fixed. One generation, or one age, may approve and find valuable what another does not. The question is, How much of such teaching do we find valuable in this twentieth century, when we survey the world laterally and longitudinally, so to speak? That is, when we take a cross-sectional view of human society to-day, and when we view it throughout its entire history, how much of the teaching of the Greek philosophers and Hebrew prophets can we use advantageously? Social welfare is the test. I also suggest to the students that they individually may well phrase the whole matter as Hegel did, "Be a person and respect others as persons."

In this same connection, too, I discuss the four typical human ideals formulated by Giddings,<sup>7</sup> viz., "The Forceful Man, The Convivial Man, The Austere Man, and The Rationally Conscientious Man," the last being a kind of resultant of what is best in the other

<sup>7</sup> Giddings, "Inductive Sociology," pages 82-83.



three, and suggest that this presents the ethical ideal in a very serviceable form.

The last main topic that I attempt to treat is the realization of the ideal, and I consider it with reference to both an ideal and the actual environment. The former I can discuss only vaguely, as is usually true when we deal with what pertains to the future. Spencer's ethical state on beyond "Industrialism"<sup>8</sup> comes nearest in my estimation to what we may mean by an ideal environment. The actual environment, both physical and social, I consider more at length, and suggest that the nearest possible approximation to the ideal, as sketched, in the midst of actual conditions, not neglecting of course to improve such conditions wherever possible, is the truest interpretation of that ideal itself. The ideal always outruns individual achievement, but if we take its true measure, and estimate properly the rational element which it must contain, real failure with consequent pessimism need not come.

In conclusion, I may say that I regard college students as the variable element in the community. They are in college as the result of selection. The community rightfully looks to them for leadership. They need to appreciate both the social consciousness and the individual consciousness, and to realize, too, that they themselves constitute a distinct group, somewhat as the Stoics regarded themselves on the side of their cosmopolitanism. The emphasis on different groups, which I have only touched here and there in this paper, but which I regard as fundamental, is important for college men and women that they may take their own proper measure. At the same time, they need to realize that they are a part of the larger group, and that their contribution to its welfare will come through their close affiliation with the group, but not complete submergence in it. Their true attitude is not to worship "the god of things as they are," but to struggle for things as they may be.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Handbook of the History of Philosophy.* Vol. I. DR. ALBERT STÖCKL.  
Translated by REV. T. A. FINLAY. New York: Longmans, Green and Company. Pp. 450.

Although this book belongs to an earlier generation of productions, both in its German and English versions, it is not well known. Its reissue, therefore, must be evidence that the publishers believe it to be a work of

<sup>8</sup> Spencer, "The Principles of Ethics," Pt. I., Chap. XV.; "The Principles of Sociology," Pt. V., Chaps. XVII.-XVIII., Pt. VIII., Chap. XXIV. Höfling, "History of Modern Philosophy," Vol. II., page 481.

permanent value. Like all written histories, the histories of philosophy are of two kinds: those that survive the eliminating process of time; and those, yet untested, that are the interpretations of the philosophy of the past which each generation is impelled to make for itself. Although this "History of Philosophy" has not been submitted to the test of the larger public, as Ueberweg's, Erdmann's, Schwegler's, Zeller's and other German works have been, yet the publisher has tested it and he is always a discriminating and valuable factor in the permanent survival of his own books.

With some qualifications, which will be subsequently noted, the reader will applaud the wisdom of the publisher. The book is encyclopedic in character and includes all the ramifications of European philosophy down to the period of the Renaissance; and these are introduced by some readable summaries of the philosophies of the East. The value of this encyclopedic character of the work is minimized, however, by the lack both of a table of contents and an index. Furthermore, the bibliography cited naturally does not include any work of later date than 1868 (since the book was published in 1870). Evidently the translator thought that a citation of more recent works would be an anachronism in this reissue. Yet Mr. Finlay would have had many good precedents, if he had introduced references to later writers, for the author follows Ueberweg and quotes from him very largely: and the translator would have done well to follow the translators of Ueberweg and to have included references to all the more recent works.

Yet a good text is its own best table of contents and this is the case with Dr. Stöckl's book. To this end the translator has largely contributed by his admirable translation. The organized marshaling of the material and the systematic arrangement of the text is a striking feature of the book. Of course a novice can not find in this book what he seeks; but all the material is easily accessible to the student of philosophy. The author calls his book a "handbook" and to make it such he has abridged his own larger work and made use of Ritter, Nixner, Zeller, Usehold, Erdmann, and especially Ueberweg. From the point of view of the reader it is difficult to see how so formidable a book of four hundred and fifty closely printed pages which covers only one half the history of philosophy can be used as a "handbook." But it must be confessed that in philosophy alone among the sciences encyclopedic works have in the past been its only "handbooks." Nevertheless while the book is rather formidable as a handbook there is scarcely a paragraph or page that is dull. And this is due to the skillful arrangement of the material and to the easy flow of the clear English sentences.

An old book reissued must meet modern demands. Does Dr. Stöckl's book altogether meet the demands of modern scholarship in its treatment of many important questions about the ancient philosophers? Can a book of forty years ago be reissued and not be rewritten? In the main in this instance we may find justification; but in very many important respects we may challenge the wisdom of it.

In the first place, did Dr. Stöckl write a history of philosophy that is the history of the *evolution of doctrines*? It would indeed have been unique in his generation of philosophers if he had done so. Like all the histories of philosophy of that time, this book is more a chronological catalogue of doctrines than the treatment of the organic evolution of thought. It is—like Ueberweg's "History of Philosophy," which is its model—like a gallery of portraits of men, whose relationship seems to consist only in their being side by side in the same room. And, furthermore, the point of view of the author would naturally, but not necessarily, preclude him from writing an evolution of doctrines. Dr. Stöckl wrote as a Roman Catholic for Roman Catholic students. In his time the history of philosophy used mainly in Catholic institutions was Schwegler's little book, which omits all treatment of the scholastic philosophy. Since then the Roman Catholic scholars have not been idle and such books as Turner's "History of Philosophy" and De Wulf's larger work have done the middle ages justice as a period of acute thinking. The Protestant student, too, gladly finds in such books supplements to other histories.

And yet however much the exposition of medieval doctrine may complete the history of philosophy, the Roman Catholic writers seem unable to write an evolutionary history of philosophy in which the facts of history are evaluated as moments in the process. To assess historical doctrine by religious or any standard other than the purely historical is not to produce a history of philosophy. When the author says "the system of Erigena may bear the imprint of genius, but it is not Christian"; when he says, "What the ancients had longingly sought for was now granted to men by the mercy of God"; when he says, "Anarchy has invaded the mind whenever and wherever Revelation is discarded"—he takes the point of view that makes it impossible to develop an organic history of doctrine. The natural effect upon any reader—whether he be Catholic or non-Catholic—will be the opposite of what the writer intends: the reader will mentally discount all evaluations he finds in the book.

In the second place, does this book meet the demands of modern scholarship in regard to the many special questions in the history of philosophy? This is not to be expected. If the reader knows what to expect, he will merely not read such topics, but will turn to the excellent expositions that constitute the main body of the book. The question about the historical setting of pre-Socratic Greek cosmologists is not discussed. Of course Bury's theory that the cosmologists saved Greece from the mysteries will not be found here. The importance of Democritus and his place beside Plato and Aristotle was not known by scholars of the generation of Dr. Stöckl. In this book the so-called Pythagorean doctrine is attributed correctly to the later disciples, but the Pythagoreans are not properly placed with the later cosmologists. In regard to Plato the usual conventional German interpretation of Plato's "two-world" theory is given—although too much space is allowed for the discussion of Plato's physical theories. Since Dr. Stöckl had before him only the theories of Schleiermacher, Hermann, and Munk, the reader gets none of the modern



theories about the development of Plato's dialogues—such as that of Windleband and that of the advocates of the "stylometric test." Then there is much confusion about the Epicurean doctrine of happiness, and we wish the author had not written "the contrast between this teaching and Stoicism both in method of argument and ultimate conclusion need hardly be pointed out."

There are faults and omissions in the book. They are incidental to the epoch in which the author wrote and to the point of view of the religious body to which he was attached. As the reader proceeds from the Hellenic Roman to the medieval period, he finds a wealth of material upon which the author has drawn for his elaborate expositions not only of the philosophy of the Christian schoolmen, but for those of the contemporary Arabian and Jewish scholars.

HERBERT E. CUSHMAN.

GRENOBLE, FRANCE.

*Annales de l'Institut Supérieur de Philosophie.* Tome I. Année 1912. Louvain: Institut Supérieur de Philosophie. Pp. 708.

The kingdom of Belgium, "small in extent, but great by its industry and commerce," as Foncin put it many years ago, is great also by its intellectual development.

Well known is the importance of the University of Louvain in the history of Neo-Scholasticism. The lovers of medieval thought, after learning the elementary course of scholastic philosophy published by the university, after perusing the admirable series of masterpieces known as the "Cours de Philosophie," have now enjoyed for nearly twenty years the pure stream of scholastic doctrine which flows from the pages of the *Revue Néo-scholastique*. And this mountain of philosophical production has been but the prelude of the riches which were to follow, the treasures of erudition contained in innumerable monographs on medieval and modern thought; and, a few months since, the undertaking of a translation with commentary of the philosophical works of Aristotle which, from the volume already published (the first book of the metaphysics), promises to be the best ever written in any language. And, as if such monuments of erudition were not enough to satisfy the love of knowledge of the Louvain professors, we are now offered a large volume of more than seven hundred pages in quarto entitled "*Annales de l'Institut Supérieur de Philosophie*."

This volume consists of a series of studies which, taken together, may well be considered as a mirror of the mentality of the philosophical world at the present day. Nothing is forgotten of what now interests us: Psychology, sociology, cosmology, Greek philosophy, scholastic philosophy, pragmatism, Bergsonianism, all find in the volume admirable exponents.

Most of the authors of this first volume of the "*Annales*" were already known to us: Lottin, Balthasar, Mansion, through the pages of the *Revue Néo-scholastique*; others through separate works which had already attracted universal attention. The celebrated psychologist, A.

Michotte, whose work entitled "*Le choix volontaire et ses antécédents immédiats*," published two years ago, placed him in the first rank among experimentalists, now offers us three separate monographs, the first of which, entitled "*Contribution à l'étude de la mémoire logique*," heads the volume and is devoted to the systematic analysis of the factors which come into play in the memorization of groups of words, bound with one another by logical relations. He also establishes a parallel between logical and purely mechanical memory with regard to their respective mechanism and results.

Michotte's psychological work is followed by Lottin's monograph on the Belgian sociologist Quetelet. Having studied Laplace's "*Traité de Mécanique céleste*," Quetelet, as the author shows, conceived the noble ambition of founding an analogous science for the phenomena concerning man.

In "*La Notion de Nature dans la physique aristotélicienne*," A. Mansion carefully analyzes the various definitions which Aristotle gives of the concept of nature, so important in the peripatetic philosophy. He shows us the applications which Aristotle makes of this concept, and the various ways in which nature exercises its influence in the universe.

In an article entitled "*La Méthode en théodicée*," N. Balthasar makes a thorough study of St. Anselm's famous ontological argument. After showing its genesis, the various interpretations to which it gave rise, and its fate in the various epochs of the history of philosophy, he portrays side by side the respective methods of Anselm and Thomas Aquinas in natural theology; idealistic the former, realistic the latter.

Pragmatism occupies a large place in the volume. Besides an article entitled "*Le Pragmatisme et la Philosophie de Bergson*," by P. Nève, it is against the pragmatic conception of the universe, and especially the views of Mr. Ed. Le Roy, that J. Lemaire directs the pages of his study on the foundation of cosmology (*Les bases de la Cosmologie*). As for Mr. Nève, he gives a clear and lucid exposition of Bergson's philosophy, against which he defends the position of intellectualism. In Mr. Nève's opinion, Bergson's philosophy is not only pure pragmatism, but the definitive form of pragmatism, the form which will live and pass to history. This, by the way, is one of the few statements of the volume about the truth of which some American readers will perhaps feel suspicious. For, although Bergson's philosophy resembles pragmatism in some of its assertions, it seems to be at bottom not only different from our American pragmatism, but its very opposite. Whereas pragmatists assert that a thing is true when it works and turn their eyes towards the practical aspect of things, Bergson gives us a philosophy which, he assures us, will be absolutely useless from a practical point of view.

Let us not forget the longest and, at the same time, one of the most important articles of the "*Annales*": the essay on Belgian criminology (*La Criminalité belge*) by C. Jacquart. The author, starting from the most accurate statistical records, puts before our eyes, as it were, the pathology of his country. No study can be more fruitful. For just as

the exact knowledge of the pathological conditions of an organism is essential for the cure of a disease, so the accurate understanding of the influence of the social conditions on the production of crime is necessary to the legislator who wishes to bring about the true moral progress of a country.

LOUIS PERRIER.

NEW YORK CITY.

*The Nervous System: An Elementary Handbook of the Anatomy and Physiology of the Nervous System.* JAMES DUNLOP LICKLEY, M.D. New York: Longmans, Green, and Company. 1912. Pp. 130.

There is a strong trend just now toward the separation of psychological instruction from its necessary accompaniments of physics and physiology. Within the past year or two, a number of text-books have appeared which do not regale us with those old familiar pictures of the cerebrum and excerpts from Ramon y Cajal that aforetime lured the callow. The conviction has grown that what is worth doing at all is worth doing well, and that a psychologist can not hope to tuck into his elementary treatise an orderly and adequate presentation of all necessary collateral information. This he should therefore leave to the proper specialists.

Already we find the latter accepting this sane view. Dr. Lickley does so, and most successfully. His volume is shaped wholly to the purposes of the student in psychology. It omits a vast deal of over-technical and highly specialized and debatable material that would only confuse the beginner. On the other hand, it has avoided the sin of false simplicity which taints the usual digressions of the old-style psychological text-book. Indeed, if Dr. Lickley errs at all, he errs a degree on the side of technicality. His little book is altogether admirable and ought to hasten the excision of sketchy, unauthoritative physiological gossip from psychology text-books.

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

## JOURNALS AND NEW BOOKS

THE INTERNATIONAL JOURNAL OF ETHICS. July, 1912. *The Many-Sidedness of Moral Education* (pp. 383-399): SOPHIE BRYANT. - Moral education included, (1) the transformation of impulse into steady purpose; (2) the evolution of altruism along with egoism; (3) the training to dutifulness and voluntary submission to the social will. *Competition, Natural and Industrial* (pp. 399-419): IRA WOODS HOWERTH. - Competition, in the natural order, is a necessary incentive to action. Industrially, its necessity diminishes with advancing intelligence. *The Rights of Man* (pp. 419-437): A. K. ROGERS. - As a tool, the concept of rights does not rest upon a universal rule, but upon the fact that it is a useful instrument in securing what we desire. *The Ethical Basis of Calvinism* (pp. 437-449): W. A. ROSS. - Calvinism expresses the spirit of enterprise,



of individual liberty, and of Stoicism. *The Present Altitude* (pp. 449-461): F. CARREL. - Civilization has not advanced as far as we might expect in four thousand years. *Book Reviews.* Henri Bergson, *L'Évolution Créatrice*: MARY HUSBAND. Henri Bergson, *Creative Evolution*: A. E. TAYLOR. B. Bosanquet, *The Principle of Individuality and Value*: J. S. MACKENZIE. Nathaniel Schmidt, *The Messages of the Ports*: C. H. JOY. Thomas C. Hall, *History of Ethics Within Organized Christianity*: E. G. HOLLANDS. G. W. F. Hegel, *Grundlinien der Philosophie des Rechts*: J. E. McTAGGART. Gino Dallari, *Il Nuovo Contrattualismo nella Filosofia Sociale e Giuridica*: J. WHITTAKER. Robert C. Brooks, *Corruption in American Politics and Life*: J. H. TUFTS. Charles Zueblin, *Democracy and the Overman*: G. S. PATTON. F. Müller-Lyer, *Der Sinn des Lebens und die Wissenschaft*: W. J. ROBERTS. J. H. Harley, *The New Social Democracy*: W. J. ROBERTS. Achille Loria, *Contemporary Social Problems*: W. J. ROBERTS. B. Seeböhm Tree, *Unemployment: a Social Study*: O. P. ECKHARD. F. J. Gould, *Youth's Noble Task*: M. LIGHTFOOT EASTWOOD. J. S. Knowlson, *England's Need in Education*: M. LIGHTFOOT EASTWOOD. Margaret McMillan, *The Child and the State*: M. LIGHTFOOT EASTWOOD. William Boyd, *The Educational Theory of Jean Jacques Rousseau*: RICHARD SMITH. *A Correction*, The Editors.

Christiansen, Broder. Vom Selbstbewusstsein. Berlin: B. Behr's Verlag. 1912. Pp. 87. M. 2.40.

Rashdall, Hastings. The Metaphysic of Mr. F. H. Bradley. From the Proceedings of the British Academy, Vol. V. London: Henry Froude. 1912. Pp. 27. 1s. 6d.

Schmied-Kowarzick, Walther. Umrik einer Neuen Analytischen Psychologie. Leipzig: Johann Ambrosius Barth. 1912. Pp. vi + 318. M. 7.

## NOTES AND NEWS

### LETTER FROM PROFESSOR COHEN

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

In Professor Lovejoy's careful review of Professor Perry's book<sup>1</sup> there occurs a statement which is so important for present-day discussion, and yet so readily settled on its own merits, that it seems to me well worthy of separate attention. It is the following:

(1) "The relativity of secondary qualities is taken by science as an evidence of their subjectivity, (2) because otherwise you would apparently be compelled, self-contradictorily, to assert of one and the same object that it 'really' and in itself is at the same moment long and short, square and oblong, hot and cold, red and gray, and so on."

<sup>1</sup> This JOURNAL, Volume IX., page 675.

I have inserted the numbers because I wish to separate the statement of fact from the reason assigned for it, and to challenge both.

(1) Is there a science which actually treats secondary qualities as subjective? It is true that certain philosophic mechanists like Galileo or Descartes have so expressed themselves, but surely the science of optics does not use the category of subjectivity to explain why the same object does appear long and short, square and oblong, etc. The straight stick, for instance, appears bent when partly immersed in water, not because of the nature of consciousness, but because of the mathematical properties of light rays. So physiologic psychology explains the fact that the same object appears both hot and cold, not by the nature of consciousness, but by the differences in the physical or physiologic sensorium.

(2) The assumption that the same object can not "really and in itself" "at the same moment" be "long and short," etc., seems to me a most unwarranted assumption. The same line may and does "really and in itself," at the same moment, subtend an angle of  $45^\circ$  from one point, and  $23^\circ$  from another without involving any self-contradiction—no more, at least, than Professor Lovejoy when he has his face to the north and his back to the south.

I call attention to these two points because the prevalent impression that consciousness is necessary in order to explain the facts of illusion seems to me to rest on demonstrably false logic. Indeed to resort to consciousness as an explanation of the fact of error or hallucination, is precisely the same kind of a procedure as to invoke the faculty of memory to explain the fact that some of us forget things so readily. Memory and consciousness are both very important facts; but the former will not explain to us why some things are forgotten rather than remembered, and the latter will not explain why some beliefs or judgments are false rather than true.

Respectfully yours,

MORRIS R. COHEN.

COLLEGE OF THE CITY OF NEW YORK,  
December 9, 1912.

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ACCORDING to previous announcement the American Philosophical Association met at Columbia University on December 26 to 28. The President of the University received the members of the Association at the presidential residence on Thursday evening. The annual smoker was held in the Graduates' Room in the Hall of Philosophy on Friday evening. The final session was held at the College of the City of New York, where the members were entertained at luncheon by the College. Officers for the ensuing year were elected as follows: president, Professor E. B. McGilvary, of the University of Wisconsin; vice-president, Professor H. A. Overstreet, of the College of the City of New York; secretary, Professor E. G. Spaulding, of Princeton University; new members of the Executive Committee, Professor J. E. Creighton, of Cornell University, and Professor Mary W. Calkins, of Wellesley College.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### ON SOME NOVELTIES OF THE NEW REALISM

IN a paper published last year<sup>1</sup> and again in the course of the discussion of "The Relation of Consciousness to Object in Sense Perception," at the recent Cambridge meeting of the American Philosophical Association, the present writer expressed the hope that some qualified representative of the "new realism" would some day explain more fully how that theory proposes to deal with what has long and notoriously been its greatest difficulty, *viz.*, the reconciliation of the "epistemological monism" which it professes with the facts of perceptual and other error. This hope has now been in large measure gratified, thanks to Professor McGilvary, whose paper, read only in brief summary at the Cambridge meeting, has since appeared in full.<sup>2</sup> It can not, of course, be assumed that all who are of the same household of faith would adopt precisely the same mode of apologetic or accept Professor McGilvary's account of the metaphysical status of hallucinatory objects and illusory qualities.<sup>3</sup> That the difficulty in question is, at least, not a factitious one, or an easy one for a realistic epistemological monist to deal with, is fairly plainly shown by the diversity of the ways in which adherents of that doctrine may now, at last, be observed to be wrestling with it. But the impartial spectator of these involved struggles can, for the present, judge fairly of their success only by carefully examining the issue of each one separately. Since Professor McGilvary has been good enough to reply directly to some of the points raised in my former article, I shall here deal chiefly, but not exclusively, with the suggestions contained in that part of his paper. But it is worth while to begin by reminding the reader of the general nature and significance of the matter under discussion.

I. First, then, a word of explicit statement in regard to the mean-

<sup>1</sup> This JOURNAL, Vol. VIII., page 589.

<sup>2</sup> *The Philosophical Review*, Vol. XXI., page 152.

<sup>3</sup> At the time of writing, I have not seen the announced volume of essays by the authors of the "Program and Platform of Six Realists."



ing of epistemological monism when conjoined with realism. I understand the ground and the implication of that combination to be the theory that "consciousness," or at least cognition, is a "purely external relation among objects"; the theory, in other words, that the nature of consciousness is such that it can not determine the existence, or add to or alter the qualities, of *any* of its so-called objects, but can only give to existences entirely independent of it a sort of "togetherness" or relatedness, or, in Professor Perry's phrase, "aggregation." It is—the point should be noted—implicit in an epistemological monism based upon the relational theory of consciousness that *no cognized object whatever* owes to its being "in the consciousness-relation" any of the characteristics which it is there found to have, or any of its other relations; if it were at the moment "outside of" that relation, it would just as truly "exist," and would exist with precisely the same characteristics. If the doctrine of the externality of the consciousness-relation is not meant as a universal proposition, it can not serve the purposes of the new realism. If *some* things or qualities do exist only in and by means of consciousness, it becomes an open problem how many are of this sort; and one could not argue from the nature of consciousness to the impossibility that perceived objects should exist only in consciousness, or should possess there "subjective" qualities different from those which, in their independent natures, they actually possess. But such argument from the nature of consciousness to both a realistic and an epistemologically monistic conclusion is distinctive of the "new" realism; it is, indeed, as I have lately contended,<sup>4</sup> the one novel and distinguishing argument of the school. When its lid is removed, however, it proves to be a Pandora's box, containing as its implications many startling subsidiary novelties.

Such a doctrine is confronted with certain familiar facts of experience, which have long since made common sense, and most of our physical science, reject the supposition that what is in consciousness is always and in all significant respects unaffected by that circumstance, that what things seem they also are. "Consciousnesses" are, as our realists do not deny, many; they belong to different percipient organisms. And in the several consciousnesses of what both common sense and the new realism call a single object, that object usually appears with a large amount of diversity and incongruity superimposed upon its assumed identity. Its color, its size, its temperature, and the like, are, in the consciousness "centered" by its relation to organism *A*, not what they are for the consciousness which has organism *B* for its center; these qualities

<sup>4</sup> This JOURNAL, *op. cit.*



are often not only, in the several perceptions, diverse, but also incompatible with one another. Common sense has therefore concluded that, if there is to be any such thing as the *same* object for different percipients, that object must be one which is qualitatively diverse from some, perhaps from all, of the contents of the several consciousnesses. It becomes necessary, as Mr. Russell<sup>5</sup> expresses it, to assume that, "if there are to be public neutral objects, which can in some sense be known to many different persons," these objects are *not* identical with "the private and particular sense-data which appear to various people." The commonest of experiences, then, has constrained common sense to deny that all the content of consciousness is independent of and external to particular consciousnesses, and has led it to conceive that existents are of two sorts: (1) those belonging to the one, coherent world of objective or independent reality, in which objects can never have two contradictory qualities at once; (2) those belonging only to one or more of the many "private and particular" worlds of "subjective appearances," each of which appearances likewise conforms to the rule of the non-contradictoriness of actually presented qualities *inter se*, but may to an indefinite degree contradict the presentations in other subjective worlds or the realities of the objective world.

Such is the simplest and most obvious of the considerations which have long since led mankind for the most part to regard "being in consciousness" as the only sort of being which some existents possess, and consequently to think of consciousness as much more than an "external relation"—in other words, to find a consistent epistemological monism irreconcilable with the realism to which most men have continued in some fashion to adhere. There are, however, many other analogous considerations. One of the more striking sort is the case of hallucinations, which was especially emphasized in my previous paper; here we have what is regarded as an identical space presented to one percipient as occupied by an object of a specified sort, and simultaneously presented to all other percipients as vacant of perceptible objects, or as quite otherwise occupied. Human reflection has dealt with these cases, and again, with dreams, by assigning the discrepant appearances to different "minds" and eliminating them thereby from the supposed common and public world of genuine objects; Heraclitus merely gave vivid expression to the universal explanation of these discrepancies when he said that in dream "every man turns aside into a world of his own." Besides, again, these disagreements between the perceptions of different per-

<sup>5</sup> The best criticism, though it is wholly an implicit criticism, upon realistic epistemological monism, known to me, is to be found in the second and third chapters of Mr. Russell's little book entitled "The Problems of Philosophy."

sons, there are the temporal differences, which common sense has always recognized, between the date of a thought or perception and the possible dates of its objects. To most men—to nearly all men, until the new realism began to flourish—nothing has seemed more evident than that many things appear in consciousness neither *as* they are nor *where* they are nor *when* they are; and that consequently it is only by regarding much of the content of consciousness as subsisting solely in and for consciousness, that any marginal region of purely objective and independent being can be believed in at all. In this large, but seemingly inevitable admission of common sense, idealism has found its foothold.

II. All these are elementary commonplaces. What, now, is Professor McGilvary's way of dealing with these commonplace objections to realistic epistemological monism? Before discussing them, I must confess to some uncertainty whether he *is* an epistemological monist. In general, his paper reads like an elucidation and defense of that theory; and the relation of most of his reasoning to this general purpose is admirably clear. Yet at certain important points his language appears to me to be that of an "old," or dualistic, rather than of a "new," realist. There are even moments when his doctrine seems to present the amiable and familiar lineaments of idealism.

The part of the position that is clear relates to the distinction between "material" and "immaterial" objects, and to the unity of space *quâ* space. The realism proposed, we are told, "does not try to classify the facts under the traditional rubrics 'real' and 'apparent,' mutually opposed and exclusive. It does classify them under two very different rubrics, 'material' and 'immaterial.'" A material object is one which is space-occupying and also space-monopolizing, *i. e.*, impenetrable by other objects of its own class; an immaterial object is one which, though it may be space-occupying, is not space-monopolizing, but is ready to share the same portion of extension with other objects. That the existence of "objects" of the latter class is conceivable without contradiction, is the principal contention in Professor McGilvary's criticism of the argument against the new realism which I (and others before me) had endeavored to draw from the facts of illusion and perceptual error. One sort of object may [visually] be in exactly the same space in which quite another object has its [tactual] existence; the image that I see in the hand-mirror "is seen to be just where," if I reach my hand behind the mirror, "the wall is felt to be. Each is in space, in the same space, and in the same place in that space." And the principal advantage which philosophy derives from this

introduction of the notion of "immaterial objects" seems, in Professor McGilvary's opinion, to be that it obviates that sort of multiplication of spaces which appears to be involved in the account of the facts summarized above. While the usual theory "has many other difficulties," the only one which is actually pointed out is (if my enumeration is not incomplete) that the theory "forces you to recognize two spaces where only one is actually experienced"; whereas Professor McGilvary's way of putting the facts leaves only one space in question, though it crowds two objects into the same portion of that space. So much I can understand. My uncertainties as to the meaning of the position taken begin when, in the first place, I try to find out what has become of "the traditional rubrics 'real' and 'unreal,'" and how the two new rubrics stand related to these. If the committee's definition of real objects ("such objects as are true parts of the material world")—a definition which I can myself not regard as very luminous—is adopted by Professor McGilvary, "immaterial objects" would thereby be designated as "unreal," but only in the tautological sense that they are not truly "material," within Professor McGilvary's meaning of that term. There is, however, a sense of the word "real" in which the question whether, *e. g.*, these so-called immaterial objects are real or unreal leads to no such barren tautology; this is the sense which Professor McGilvary seems to prefer to express by the term "physical." The ether, for example, is called "a 'physical' object, because if it does exist it shares with material objects the common characteristic of not having to be a term of a consciousness-relation. It may, in other words, exist 'outside of consciousness'; it succeeds very well in keeping outside all the time (*sic*).'" But the ether, though a physical, is, in the sense defined, an immaterial, object, since "its continuity involves its sharing with material objects and immaterial objects such portions of space as they occupy." Some "immaterial objects," then, exist independently of the consciousness-relation, are "physical"; so much is clear. But is it not almost as clearly implied that there is a class of non-physical objects, things that can be thought about and even actually given in perception, which we need not declare to be existent in any other degree or other sense or other time? For example, whether the ether "exists," says Professor McGilvary, is "problematical." But of course it is not problematical that the ether has been thought about and defined, and so far brought into consciousness, though never into the mode of consciousness called sense-perception. Make, then, the supposition, of which the admissibility is not denied, that the ether does not "exist"; in that case, our universe of discourse would include at



least one object of the second class, *i. e.*, a non-physical or non-existent object, having no being outside of, or independent of, the consciousness-relation.

Now, if the scheme of a universe which Professor McGilvary so interestingly sketches is to be understood to include any object of the second class, it is not a monistic scheme in the epistemological sense. It does not, in other words, maintain that the "relation" in question is so purely external and otiose, so incapable of being the condition or ground or exclusive context of the being of anything else, that an object's being perceived or imagined or conceived can make no difference at all in the object, beyond lending it an obscure sort of "togetherness" with other objects. And the suspicion that Professor McGilvary is not really a whole-hearted epistemological monist is somewhat confirmed by the fact that he does not leave this togetherness entirely without further definition. It is, one learns, in the first place, "a relation which has a unique center of reference"; and this center, presumably, is not itself a relation. What, then, is it? It is not, at any rate—one is told—simply a spatial center, though it involves a spatial ordering of objects about the body. "The spatial and temporal centers of experience are not merely spatial and temporal centers; they are spatial and temporal centers of a complex which has a distinctive character given to it by the fact that it is a conscious relational complex. . . . In short, *the center of experience is a conscious center.*" "Consciousness is . . . a relation which relates in just the specific way that *brings about the things that we call our experiences.*"<sup>6</sup> Thus it turns out that "consciousness" is not only the name of a certain kind of grouping or "aggregation" of objects; it is also the name of that *to which* they are related, or of an attribute thereof; and through this marriage of an object and a "conscious center" there are, it would seem, generated things in some respects different from both, which are to be called "experiences." What a conscious center, or its distinguishing attribute, is, Professor McGilvary does not tell us, nor does he explain the nature of "experiences." But it is at least clear that, while this may be a "realistic *Weltanschauung*," it is not altogether unequivocally a monistic epistemology. A consciousness which is so much and can do so much as all this, can hardly be that wholly "external" and relational and irrelevant thing which, for the purposes of the new realism, it is essential that it should be.

If, accordingly, Professor McGilvary actually means that our "experiences" include objects which, apart from their presence in consciousness, do not "exist," then—*cadit quæstio*. . He and I, and

<sup>6</sup> *Op. cit.*, pages 165, 166.



other critics of neo-realism, are entirely at one upon the essential issue. The whole point of the argument from hallucinations is that in those phenomena we find "instances in which the meaning of an object's 'being in consciousness' can not be expressed in terms congruous with the relational theory"<sup>7</sup>—by which is meant, of course, the theory that consciousness is *nothing but* an *external* or non-constitutive relation. And the reason why such instances have been held to be incongruous with the theory is that they show that some objects are not independent of consciousness, but exist only as appearances in consciousness. If, then, this last be admitted—even though for different reasons—the essential objection to the external-relation doctrine stands. "A genuine realist," as I have elsewhere put that objection, "can escape dualism only at the cost of denying that there can be at any given cross-section of time both appearance and reality." But, to judge from Professor McGilvary's references to objects that are thought about but do not "exist," he does not deny this. He therefore does not escape dualism.

III. Yet for the most part he certainly writes as one desirous of escaping it, and willing, in order to do so, to defend the paradoxical implications of realistic epistemological monism. In his plainest utterances upon the subject, he appears to reject the notion of the many private and particular worlds of different minds, and of the two modes of existence, and to declare that, while there are, indeed, in a sense, "many worlds," neither the worlds as such, nor their diversities of content, depend upon or exist solely in minds or a relation to any mind. There is one real space "in which are located material and immaterial objects." The immaterial objects (*e. g.*, of a hallucination) are just as truly *there*—or perhaps one should say, just as truly would be there—as if no hallucinatory consciousness had chanced at the moment to twine about them irrelevant festoons of external relationship. Unless Professor McGilvary means to support precisely this consistently monistic view in its fulness, it is not clear to me why he should have thought it worth while to argue as he has done against my objection that, when realistic epistemological monism is thus made consistent, it involves the paradoxical assertion that two extended objects may simultaneously occupy the same real space. His mode of reply is to admit that this assertion is involved in the theory, but to deny that the assertion is self-contradictory or even contrary to the witness of experience. His defense, then, of this apparent paradox implies at least a provisional adoption of the doctrine by which the paradox is generated.

<sup>7</sup> Professor McGilvary has himself quite fairly quoted this sentence as a summary of the main contention in my former paper.

It is, indeed, clear throughout the part of his article which is more especially addressed to the argument from hallucinations and the like, that Professor McGilvary feels that even in non-veridical perception the perceiving must be held to be non-constitutive of the object, and the object be credited with some ineffable *plus* of independent being over and above its being in consciousness.

I call this *plus* ineffable because it is manifestly impossible for the new realist to assign any concrete meaning to the object's "transcendence of consciousness," in those cases in which the consciousness is what we call hallucinatory. It is equally manifest that he can, in the nature of the case, offer no evidence of this indefinable transcendence. The most familiar sense of the proposition that *A* exists independently of its relation to *B* is the temporal sense: *A* exists at times when it is not in that relation. But it is evidently not in this sense that independence is asserted in these instances; the hallucinatory object, says Professor McGilvary, "was not before it was perceived, although its causes were; it ceases when it ceases to be perceived." Is it, then, meant that the hallucinatory object had at the moment other sensible qualities than it was perceived to have—that there was more of it than entered into the consciousness-relation? This would be a highly gratuitous assertion, destitute of any empirical or other imaginable evidence; and one can therefore hardly suppose that the neo-realist intends to maintain it. Does he mean, then, that these false objects are parts of the dynamic system of nature, that they must, for example, be reckoned with by the physicist who would compute the forces acting at the point where the objects appear to be? Clearly not this, either. But if none of these senses be meant, the asserted independence of the hallucinatory object remains a thing mystical and unutterable, as well as eternally unverifiable.

Professor McGilvary, it is true, intimates, though he does not quite express, a fourth sense, in which he apparently believes that the independence of such an object can be significantly maintained. The object, namely, is in space; and the space that it is in is the one, universal, real space in which, in exactly the same sense, all other objects—"physical" and non-physical, "material" and "immaterial"—are. But obviously, even though the space were existent independently of consciousness, the *object's* being and qualities would not thereby be shown to be independent of consciousness; nor could we derive from the admission of the independence of a permanent space any definite meaning for the notion of the independence or consciousness-transcendence of the object's transitory existence and attributes. It seems, none the less, to be because of a

belief that *if room can be found in real space for the hallucinatory object* its independence can in some sense be maintained, that Professor McGilvary has been led to affirm the possibility of the "occupancy" of one portion of space by many objects—provided only, that all but one of those objects bear the label "immaterial."

The proof offered of the possibility of this multiple space-occupancy consists, as has already been mentioned, in the instance of the image of the face in the hand-mirror: here, we are told, "the image is seen to be just where the wall is felt to be. Each is in space, in the same space, and in the same place in that space." Upon this proof I shall be obliged to comment with a brevity which may perhaps not be wholly consistent with clarity. (a) It is obvious that, so far as actually sensible objects are concerned, the possibility of the joint occupancy of the same space holds only for "objects" or qualities apprehended by different senses. It is *not* a fact of experience that two tactual objects can be found occupying simultaneously the same space; nor yet that two visual qualities can, by a single percipient, be so found. One does not feel both the wall and the face in the same portion of space; one does not see both the wall and the face there, at the same instant. (b) That qualities of the sorts perceived through different senses may be presented as existing in the same place at once is a fact notorious to common sense, and never denied by the present critic of the new realism. The wall has color, and it has hardness and coldness; and by ordinary thought all three qualities are habitually localized in the same place. Nor is there anything in this which affronts "that ancient prejudice of common sense," to which I have formerly referred—*viz.*, the prejudice "against admitting that a body can both be and not be in a given space in a given instant." For qualities of one sense, detached from other qualities, are not what the terms "bodies" or even "objects" are commonly understood to mean. (c) Professor McGilvary's case of the hand-mirror differs from these ordinary cases only in that the visual qualities there given are conjoined with tactual qualities of which they are not usually the index. But this peculiarity of the special instance is not essential to the argument. The fact that face-color and wall-hardness in this case appear as locally coincident proves no more about the possibility of multiple space-occupancy than does the simple fact that wall-color and wall-hardness are usually presented as locally coincident. (d) Does Professor McGilvary, however, hold that *two qualities of the same order*—*e. g.*, two colors—can objectively, "physically," irrespective of any relations to percipients, be actual attributes at a single moment of the same portion of the same object? Apparently not.



I infer this, at least, from his remarks upon color-blindness. If he felt no difficulty in the supposition that, say, a given bit of this paper is at this moment objectively both white and black, his natural view about color-blindness would be that the object itself is of the color seen by the color-blind person and also of that seen by the person of what is called normal vision. But this paradox of rigorous epistemological monism of the realistic sort he refuses to embrace. He resorts, instead, to a principle which, I can not but think, is a good deal over-strained by neo-realists just now; the principle, namely, of the "selective action" of the "consciousness-relation." It is not that the object really has two positive and opposite color-qualities, like black and white; it is merely that it has various visual qualities of different orders, only a few of which are selected by the consciousness-relation in the case of the color-blind, while with the normal that relation is more widely inclusive. In itself, this suggestion seems to me a good example of the psychologist's fallacy; but I am not here concerned with that point. All that I now wish to deduce from the passage is that—whatever be true of other neo-realists—Professor McGilvary at least does not maintain that a single spatial object may have as its real (*i. e.*, its independent and non-relative) attributes, two different visual qualities of the *same* order, such as greenness and redness, or two different tactual qualities, such as hotness and coldness. (*e*) We do, however, find, both in hallucinations and in more normal experiences, cases in which what passes (with common belief and with Professor McGilvary) for one portion of space is simultaneously perceived, *by different percipients*, as having positive and opposed color-qualities, or tactual qualities. The delirious patient may actually behold a green serpent or a purple cow where his attendants behold a brown bottle or a white pillow. I do not see how the principle of selective abstraction can aid the new realist to explain facts of this sort. If it does not, he is compelled either to conceive of the same portion of extension as at once actually green and actually brown, or actually purple and actually white, or actually hot and actually cold—in the strict sense of those qualities—or else he must abandon the heroic enterprise of seeking room in one real space and in one independent world of objective reality for all the contents of all the simultaneous perceptions of all percipients.

IV. Passing from the difficulties which the new realism encounters in dealing with the spatial localization of unreal objects, let us now consider the kindred, but even more fundamental, difficulty which it has in dealing with the temporal dating of any objects. This difficulty is introduced by Professor McGilvary in the form of the ques-



tion: "How can we now perceive a star which for aught we know may have been extinct for a thousand years?" This question constitutes a vexatious problem for the new realism, for a reason which has already been indicated. Holding fast to epistemological monism, that philosophy declares that the thing perceived "in consciousness" and the thing independently existing (*i. e.*, the thing which *would be* there, with identical qualities, even if it did not then happen to fall within the purely external consciousness-relation) are one and the same thing. But here is a case in which a certain object—the star—exists as a percept at a time when it does not exist in the space to which its actual extension is assigned by our scientific knowledge. How, then, can a thing which exists now be said to be "numerically identical with" a thing which has been for thousands of years non-existent? It is only in the picturesquely great magnitude of the time-difference that the example of the star differs from any ordinary case of visual perception; what psychologists call the "lag" in the transmission of stimulations constitutes, I suppose, a universal, though a far briefer, time-difference between percept and thing-perceived.

Ordinary realism, of course, has no trouble with these cases; for in such matters ordinary realism is dualistic, and is thereby in a position to solve the problem by the use of the results of the sciences of physics and physiology. "That which," it says, "now exists in my consciousness, is *not* a star existent millions of miles away; it is merely a complex of secondary (and therefore subjective) qualities, which has been caused by a long series of antecedent phenomena, among which must probably be reckoned ether-undulations which a thousand years ago radiated from a certain distant star now extinct." But the new realism can not thus, for the description of the facts under consideration, employ the language of common sense and common science. It can not, in consistency with its monistic epistemology of perception, say that what is now perceived is merely a present subjective existent *caused by* the action of previous objective existents; and it can not say that the *present* star, if it is to be objectively localized at all, has its real location in the retina, or perhaps somewhere in the brain-cortex. For what the doctrine asserts is the perfect objectivity and "transcendence," not of the causes of our perceptions, but of the things and relations and qualities actually perceived. It must therefore have its own way of dealing with the apparently undisputed fact that no sensible object exists *precisely as* it is perceived and *where* it is perceived at the particular moment when it is perceived; and that in some instances this discrepancy is enormous.

Two principal ways of dealing with this fact appear to be proposed by Professor McGilvary. The first makes use once more of the consideration that the consciousness-relation, for the new realist, though it is not constitutive, may at least be consistently held to be selective. When an object enters that relation, it does not necessarily enter wholly, with all its other relations and qualities; unlike the Admiral in "Pinafore," it does not always bring on board with it all of its sisters and its cousins and its aunts. Why, then, asks Professor McGilvary, may we not suppose that, among the other relations sometimes left at home by an object when it enters consciousness, may be its time-relations? Supposing this, we should merely say of the now-perceived-but-not-now-existent-star that its date of real existence happens to be one of the relations "which are not taken into the union constituted by consciousness"—i. e., by the present moment's consciousness. Thus "the relational view of consciousness seems to enable us to deal with our specific problem in a very simple way."

But this way, alas! proves to be much too simple. As Professor McGilvary appears eventually to recognize, it gains its simplicity entirely by ignoring the essential fact in the case; namely, that the star-as-percept does *not* enter consciousness merely lacking a date or temporal *locus*. It enters consciousness with an entirely definite temporal *locus*, and one which is confessedly different, by the difference of a millennium, from that of the "real" star. "Talk away as much as we please, experience does present us with the star as *contemporary* with the body." Professor McGilvary thus seems to have called attention to this first proposed way out of the difficulty only for the purpose of pointing out that it leads nowhither.

We must therefore turn to the other avenue of escape, which is evidently regarded as a more hopeful one. It is entered through a distinction between contemporaneity and simultaneity. Two things are, by the definitions offered, contemporaneous when their existence falls "within the same durational unit," however long that unit may be, and whatever be their respective positions in that duration; by a judicious choice of one's durational unit, therefore, Plato and Dr. McCosh can be called contemporaries, or Thales and M. Bergson. Simultaneity is defined only in figurative language, but appears to mean what it is ordinarily understood as meaning, *viz.*, identity not only with respect to an arbitrarily chosen "durational unit," but also with respect to position within any such unit—in short, literal synchronousness. Now, applying this distinction to our problem, Professor McGilvary suggests "that experience gives us the star as contemporary; in our confusion resulting from lack of analysis, we mistake this contemporaneity for simultaneity."

That the confusion and lack of analysis in this matter lie in the quarter to which they are here imputed, I can not feel quite sure. "Contemporary" the "real" star and the percept assuredly are; for in the sense defined, all things are contemporary (unless we should except—the point is not made clear—those that are simultaneous!) if, as in this case, you do not specify your durational unit. Contemporaneity *überhaupt* is "longitudinal synchrononess," it is belonging to the same temporal unit, no matter what; and the only temporal unit which is not factitious and arbitrary is time as a whole. It would, then, be a strange confusion indeed, if any one should mistake this kind of contemporaneity for simultaneity; it would amount to an inability to distinguish the idea of "some time or other" from the idea of a particular and specified time. While, therefore, experience undeniably gives us the star and the perception as in some sense "contemporaneous," the fact is of no significance. It means no more than that the two both belong to the temporal order. And it does not in the least alleviate the neo-realist's difficulty. For he still, it is to be supposed, admits that there is a distinction between simultaneity and non-simultaneity; that the relation of simultaneity, or that of non-simultaneity, is a real and a significant relation; and that the star-as-percept, while it is simultaneous with my other perceptions or bodily affections of the moment, is *not* simultaneous with the presence of the star in the portion of space to which astronomy assigns its "real" spatial existence. So long as these admissions are made, the consequence holds that the star which I now perceive is not, in all of its actually given qualities and relations, identical with the star which became extinct a thousand years ago. Its date is not the date of the "objective" being of the *star-referred-to* in a determinate and distant space; it is the date of its being perceived. That its *esse* is its *percipi* is not shown by the conceded facts; what is, however, shown by them is that its *nunc esse* is its *nunc percipi*.

All, then, that Professor McGilvary has achieved by his second proposed way of dealing with the temporal difficulty in the new realism, is this: Confronted by the objection that a specified set of temporal relations—those of simultaneity and non-simultaneity—are not identical for the supposed real object and the percept, he calls our attention to the fact that there is *another* sort of temporal relation—that of inclusion within the same durational unit—with respect to which the object and the perception *can* rightly be called identical. The reply is obviously without relevancy to the objection raised; while the distinction upon which it insists, so far from being one unfamiliar or blurred to common sense, is one employed con-



stantly and with entire precision by all human intelligences—even by those of the dissenters from neo-realism. It is not, however, usually expressed by such terms as Professor McGilvary has chosen to adopt.

It ought to be added that, besides this second, and equally unsuccessful, suggestion of an escape from the time-difficulty of neo-realism, some brief hints are given of a third. On account of their brevity, I am not at all sure that I understand them. But they appear to consist in "maintaining the date-transcendence of consciousness." "Consciousness," it is remarked, "enjoys a limited transcendence of the date which is central to consciousness; but this transcendence radiates from the present, and is commensurate with the durational span of its objects." These suggestions can, no doubt, be better discussed after they have been amplified, as their author will perhaps hereafter find opportunity to amplify them. Taking them as they stand, they have the air of implying that consciousness has no date of its own, but borrows its time-relations wholly from those of the objects in it. Such a view, however, would appear to be in conflict with the unexceptionable remark, upon the same page, that when I perceive the star of a thousand years ago, "it is now and not then that I perceive"; and one is obliged to conclude that it can not be this view that Professor McGilvary has intended to convey. Whatever be his precise meaning, his language upon the point seems at any rate to manifest a tendency to either a confusion or a deliberate identification of two essentially distinct time-aspects of a perception or any bit of cognitive consciousness—namely, (*a*) the time of the perceiving or judging, the relative place of the experience in the ordered succession of experiences, and (*b*) the time *referred-to*, the relative place of the things or events thought about. It is only with respect to the latter that there is any sense in speaking of a "date-transcendence of consciousness." Consciousness refers to dates which lie beyond its own temporal limits; in plain words, we can think about past and future, and can even, as in the case of the star, have percepts of things which are past. But when I think of my grandfather's time, I do not think *in* my grandfather's time; when I read an historical novel, however absorbing, I do not, save in an obviously figurative and rhetorical sense, live in the period in which its action takes place. Eternalistic idealists, deniers of the reality of time, have, no doubt, sometimes made specious use of this figurative sense, and thereby contrived to becloud the distinction between the dates that I think about and the dates when I do the thinking. But that particular sort of play upon words, at least, is no fit occupation for a realist; if he begins to fall into it,



he will soon find himself committed to an idealistic view about time, and so outside of the realistic position altogether. With respect to temporalism, I have liked to believe, the heart of the new realist is in the right place. But temporalism becomes impossible if one fails to maintain that the past *quâ* past is irrevocable, and distinguished from the present by an essential and irreducible difference; and that what are commonly called the moments of experience—the moments, in neo-realistic phrase, when the consciousness-relation actually subsists between any given objects—are definite moments of real time, whose time-character and real *locus* are in no wise affected by the time-*loci* of the objects brought into that relation, or referred to by means of it. I hope, therefore, that when Professor McGilvary hereafter speaks of “the date-transcendence of consciousness,” he will make it plain that he really asserts no more than that the dates of existence of objects given in, or “meant” by, perceptual or other consciousness may be different from the date of existence of the consciousness. But when his meaning is reduced to this, there will be found to inhere in the phrase “date-transcendence of consciousness” no magic capable of exorcising from neo-realism the difficulty about the time-relations of objects. It will still remain clear that the time when the consciousness of a given object exists is often not identical with any time in which, in any further sense, the object can, by a realist, be supposed to exist. But this can only mean that what exists *in* consciousness at the former time is not the supposed object *an-sich*, but merely a “subjective presentation,” in which one element is a “pointing” or reference to a time other than the existential time of the presentation. Once more, then, the clear implications of conceded facts appear to render a realistic epistemological monism inadmissible.

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## REALISM AND SUBJECTIVISM

IDEALISTS have so generally united in insisting upon a few important theses that their real and radical differences have been somewhat neglected. Perhaps there is something in the idealistic temper itself which leads to emphasis upon agreements. Since all views have their bit of meaning in the life of history, the idealist has been fonder of including than of controverting them. Hence, whoever holds to the non-existence of any alogical real, to the priority of epistemology, and the precedence of “truths of appreciation” over

"truths of description," has been regarded as fundamentally right-minded and trusted to approximate the logical corollaries—one's own—of these principles. But whatever other result the present active criticism may have, it seems bound to break in upon the idealistic love feast. Nothing is more distressing than to be looked upon as discredited when it is one's neighbor, or the remains of one's ancestors, to whom this honor is due. One dislikes to hear of "idealism," when it is a subjectivistic epistemology which is under discussion,—provided, of course, one's own view has no "taint of subjectivism."

That the attack of the six realists has been upon a subjectivistic theory of knowledge, we have their assurance. That all idealists are thereby called upon to feel aggrieved, may or may not be the case. Almost every idealism holds as important certain considerations about the predicament of the knower. But they need not be those which Professor Perry has exhibited in his paper on "The Egocentric Predicament,"<sup>1</sup> or the similar ones which figure in the introduction to "The New Realism."<sup>2</sup>

The idealist is there represented as arguing that all reals must be known, or that knowing is constitutive of reality, because no real can ever be discovered out of relation to a knower. The writer, for one, admits the invalidity of any such argument. It would prove—if it proved anything—altogether too much. For "known" here means "completely and explicitly possessed as content of consciousness," the identity of the object with present experience. At least it is this meaning which the realist seems to have in mind. The identification of reality with that which is present to some one's experience, or with the sum total of present experiences, carries sinister implications. For the whole problem of knowledge, as idealism sees it, turns upon the fact that the knowing experience means or intends something beyond itself, something which just now it *is not*. Otherwise, the experience might have any affective or esthetic value which it happened to possess, but it would not be knowledge. It is characteristic of knowing, as a human activity, that its meaning is not satisfied by the self-evident presence of its own experience or content of consciousness. Hence the part played in idealistic theory by "immediacy and mediation," and the recognition of the "inevitably fragmentary character of human knowing." Thus the history of idealistic epistemology in the last century might be summed up as the history of the recipe for *getting out of* the egocentric predicament. The recognition that nothing can be known except present content

<sup>1</sup> This JOURNAL, Vol. VIII., pages 5 ff. See also "Present Philosophical Tendencies," pages 128 ff.

<sup>2</sup> Pages 11-12.

of consciousness would be fatal to the idealist's program, for it would dismiss his problem without a hope of solution. The subjectivist's dogma—that to be is to be perceived, or otherwise given in consciousness—is as distressing to idealism as to realism.

To be sure, the idealist often makes use of the conception of an ideal or limiting case of knowledge—the toilless knowledge of an absolute mind—for which knowing would mean just that detailed and explicit identity of thought and object which subjectivism maintains for knowing in general. But the idealistic theory of knowledge can get on very comfortably without hypothecating the *existence* of such a case of knowing, provided only its validity as an ideal be allowed.<sup>3</sup> As an event among other events, no such case of knowing can occur anywhere at any time. The epistemological interest in the absolute is the interest in the validity of an ideal. Idealism must explicitly deny that the total reality is identical with the experience of any finite knower. Hence it is, in general, more accurate to represent idealism as maintaining the essentially knowable character of reality than to take it as holding that all reals are known.

The knower's predicament is, then, this: all that ever is and ever can be explicitly possessed by a mind which attempts to know will be a present experience; while the sure possession of this experience can never satisfy the interests of knowledge. To glorify the immediate data of consciousness with the adjective "independent" will not help the situation in the least. The present content is there; it is experienced; its "cash value" is already ours. If one has bitten an apple, one is certain of the taste in one's mouth. It matters not whether it be an independent taste or no. What knowledge requires is that a "credit" attach to the taste. It must be significant of the quality of the apple or of another taste; it must intend something which it is not. What knowledge signifies is its meaning; and meaning always reaches beyond the present experience. The problem of the validity of this meaning is the problem of knowledge, as idealism—since Kant—conceives it.

The idealistic interest in the egocentric predicament is to point this problem, and to call attention to the fact that unless it is solved by proving some necessary relation of reality to our ways of knowing, we have only the alternatives of skepticism or various unproved and unprovable dogmas which can neither refute one another nor establish a constructive case.

We may state the problem in realistic terms. "Realism does not deny that when *a* enters into a relation, such as knowledge, of which it is independent, *a* now acquires that relation, and is accordingly

<sup>3</sup> Some idealists would disagree with this statement. But the following sentence would, I think, satisfy all but the out-and-out subjectivists.



different *by so much*; but denies only that this added relation is necessary to *a* as already constituted. Thus when *a* is *known*, it is *a* itself, as constituted without knowledge, which is independent of that circumstance. The new complex *known-a* is of course dependent on knowledge as one of its parts."<sup>4</sup> To restate the egocentric predicament: All the *a*'s and *x*'s which anybody can ever hope to know will be *known-a*'s and *known-x*'s, and as such dependent on knowledge, while it is the *a*'s and *x*'s as constituted without knowledge that are independent. The *known-a*'s and *known-x*'s will differ from these independently real *a*'s and *x*'s "by so much,"—that is, by as much as they are affected by entering into relation to a knower.

All this is trivial enough until we remember that it is exactly the fundamental tenet of all skepticism, and the *bête noire* of every dogmatism. The critical question is: By *how* much does *known-a* differ from *a*?

To avoid misunderstanding, one possible objection based on this difference may be ruled out as negligible. *Known-a* differs from *a* as a relative from an absolute term, or as *a* unqualified from *a* modified by "known." *Known-a* is a complex or one end of a relation, while *a* may be simple and unrelated. This difference is something like that between "truth" and "unpleasant truth," or that between *x-which-is-greater-than-y* and *x-which-is-less-than-z*. The logical realism of Plato was troubled to make clear how the greater could be also less. Similarly, it might trouble the new realism to make clear how independent *a* can be identical with an *a* which is known, when *known-a* is *not* independent. The difficulty is to explain identity in difference when relations are external; to explain how *known-a* is still the same *a* and yet different by being related. But any objection which turned upon this difficulty which strict logical realism has with identities, would be likely to seem rather thin. Such logical puzzles suggest a *solvitur ambulando*. It is considerations of a quite different nature which have proved historically important for idealism.

It seems useless to deny that knowing is, in some sense or other, a kind of acting. That knowing is acting would seem to argue some effect in that upon which the activity is directed. Hence *known-a* seems likely to differ from real *a* by so much as the knower's activity affects it when it enters the knowledge relation. This will hold true whether the knower is an organism which functions in definite ways of its own, a nervous arc, or merely an unbiologized mind.

Knowing might be a transforming activity of a nervous receptor, so that real *a*'s might be apprehended as upside-down *a*'s or real substances known as complexes of colors and pitches and other "quali-

<sup>4</sup> Perry, Ralph B., "The New Realism," page 118.



ties," while the independent substances were not even imaginable. The divergence of real *a* and *known-a* might be as great as that between immaterial essences and space-filling bodies. The possibilities for persuasive dogmatism here are wide.

Or knowing might be, not a transforming, but only a selecting activity. In that event, *known-a* might differ from real *a* as a continuously flowing whole from a cinematograph picture of it, or as a valuable collection from a junk heap, or an ordered array from a chaos. Knowing might be selecting so as to satisfy certain practical interests. Our Euclidean space might be just such a prejudiced selection from an *n*-dimensional or undimensional reality. And so on, for the other characters of our world as we know it. If knowing is such an activity, dominated by interests, all the reality we can ever hope to know will be relative to those interests. If knowing is acting according to certain principles, then the world of our possible knowledge will reflect the legislation of those principles.

To revert to the predicament in which the knower finds himself; he seems to be confined to the experience of such realities as are, by their nature, capable of entering the knowledge relation—if knowing is passive,—or which are transformed or selected according to certain principles—if knowing is a way of acting. If knowledge transforms or interestedly selects, or if some reals are by nature unfitted to the knowledge relation, then known reality will so far fail to indicate the character of reality as it exists independently of knowledge. That independent reality is neither transformed nor otherwise misrepresented by *known-a*'s, the knower can not, from the nature of his predicament, ever know; while the seemingly active character of knowing lends color to the supposition that "knowledge" misrepresents the independently real.

The assertion even that there is such an independent reality must remain a sheer assumption. The realist may point out the fallacy of arguing from the fact that all *known* reals are known. And the subjectivist may retort that if there be any unknown real, it is an identical proposition that nobody knows it. That reality is not transformed when brought into the knowledge relation, is a similar assumption. The proof of it would require the impossible comparison of *known-a* with *unknown-a*. That an independent reality has this or that character must remain an unwarranted assertion, when all the *a*'s which can be known will be *known-a*'s.

When the number and variety of activist theories of knowledge is remembered, it seems a hardy dogmatism which opposes to them all the necessarily unproved thesis that the real is independent of knowledge; and then adds that this independent reality is already so finely divided that no analysis can ever be carried so far as to violate

its nature; but that all the relations and all the organization which mind can "legitimately" think are also already there; in particular, that these independent reals maintain all the logical relations; and, finally, that any of these reals or any complex of them may enter into the knowledge relation—a notable case of a relation not already there—without being transformed. Such a happy conjunction of miracles reminds one of Leibniz's preestablished harmony. But this latter-day best-of-all-possible-worlds appeals to no sufficient reason.

Whoever takes the principles of knowledge to be legislative for whatever can properly be called real, and holds reality to be so far dependent on knowledge, will be assured—if he makes out his case—that *known-a's* and *real a's* are not of essentially different character, and that knowledge is objectively valid. But the person who recognizes his egocentric predicament and at the same time insists that reality is independent of knowledge and its conditions, is confined within the circle of his experience, whose relation to reality beyond he can not know. Hence, from the idealistic point of view a subjectivist is not one who takes reality to be essentially relative to knowledge, but one who takes it to be independent. Subjectivism and dogmatism are twins.

If reality is independent, while the knower can not jump out of the circle of his own experience, then we have the alternatives of skepticism—for the critically minded—or any one of a presumably infinite number of dogmatisms. None of these will be able to *prove* that reality is independent of knowledge, because such a proof would require the discovery of not-known reals and their comparison with those known. And none of these dogmatisms will be able to prove that independent reality has the character attributed to it, because the only reals which are, beyond doubt, independent, can not be investigated. Thus whatever is constructive in such a theory, will necessarily remain indemonstrable. The utmost that can be proved is that some other theorist's argument,—*e. g.*, the subjectivist's argument from the egocentric predicament,—does not prove his case. The subjectivist's *view*, as a dogma, can not be proven false; it can only be proven not proved. And every dogmatism can perform this service for every other.

If the foregoing is correct, it is no accident that the realistic doctrine is largely negative. Rather, it is inevitably the case that every such view should contain two parts; the more important consisting of proofs that the proofs—not the views—of other theories are unsound; the other portion made up of unproven assertions about an independent reality. It is a psychological defect that flesh is heir to, that we are sometimes led to believe a doctrine because arguments for an opposing theory are invalid. The realist surely means to take

no advantage of us in this respect. If realists have disproved certain arguments for the dependence of reality upon knowledge, they have not thereby established the independence of reality. If the realist be right, and idealism essentially subjectivistic, it must, to be sure, renounce its claim to a critical foundation. But it would still remain a consistent dogma, and as good as any other.

If it is taken to be the case that realism has undermined the idealist's *proofs* that the logical relations hold among reals because reality is relative to a legislative reason, still the idealistic contention is as probable as any. The realist can not disprove the assertion. He can never catch a reality out of relation to human reason, in order to discover if it still maintains its conformity to logical principles. That the logical relations are found among things does not make realism any more probable. For if to be real means to conform to certain categorical modes of thinking, then it will be an identical proposition which asserts that these principles state the relations of real things. The realist can only set up his own counter assertion and return to the business of demolishing the opponent's proofs. Thus we might conceivably be presented with dogmatic idealism and dogmatic realism as equally consistent and equally unproved doctrines; and the choice between them might, then, turn upon pragmatic considerations of workability or temperamental preferences.

If the realist can advance no direct proof that reality not only may be, but *is* independent of knowledge, that the independently real not only might not be, but *is not* altered when it enters the knowledge relation, that reality not only may be, but *is* so finely divided that analysis can never misrepresent it,—and so on for his other contentions,—then his arguments must necessarily be confined to the refutation of the proofs of other theories. In that event his case can prosper only if he turns philosophy into a Donnybrook Fair and hits every non-realistic head that shows. Even so, he will not prove his case, but only establish its possible truth,—the impossibility of proving the opposite. If this is the utmost that can be hoped from a philosophic theory, it is well that we should recognize it, and pay our respects to Hume.

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## DISCUSSION

### THE ANTILOGISM—AN EMENDATION

WHEN I wrote my paper on logic<sup>1</sup> in which I strongly urge the use of the symmetrical forms of speech and of reasoning, "no *a* is *b*," "some *a* is *b*," "is-inconsistent-with," etc., I adopted

<sup>1</sup>"Studies in Logic by Members of the Johns Hopkins University."



the plan, occasionally, as an abbreviation, of writing simply the symbol for "is excluded from," instead of "is-excluded-from *every-thing*." This can be safely done, because the other special term of logic, "nothing," or "the non-existent," does not occur with this copula. But I do not now approve of this device, and I write for the antilogism (inconsistent triad)

$$(a \nabla b) (c \nabla \bar{b}) (a \vee c) \nabla \infty,$$

instead of the form quoted by Dr. Karl Schmidt,<sup>2</sup> in which the sign  $\infty$ , meaning "existent things" or "possible states of things" is omitted. For example, take this imaginary case of rebuttal (or inconsistency): "No priests are saints." "But some priests are martyrs, and there are no martyrs who are not saints." With this *but* it is affirmed (correctly) that these three statements can not all be true at once—that their conjunction is-excluded-from "all possible states of things," or from  $\infty$ . In terms of  $a$ ,  $b$ , and  $c$ ,<sup>3</sup> one may construct this: "Nothing that's acid is blue." "But some cold things are blue, and nothing that is cold is non-acid." This antilogism is quite as intuitively evident as the syllogism, although it contains four terms and two negative propositions. All the fifteen valid modes of syllogism can be immediately put into this form, and the rule for validity is self-evident.<sup>4</sup>

To take another example: That no human beings are immortal and no angels are mortal *precludes* any angels being human. Here the copula of the compound statement occurs farther within, and no existence-term is necessary:

$$(h \nabla \bar{m}) (a \nabla m) \nabla (a \vee h).$$

The formula says: "*precludes that* any angels (some angels) are human," but rhetoric has a strong *penchant* for turning the verb of a subordinate proposition into a verbal noun.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Realm of Ends or Pluralism and Theism.* The Gifford Lectures delivered in the University of St. Andrews in the Years 1907-10. JAMES WARD. New York: G. P. Putnam's Sons. Cambridge, England: University Press. 1911.

"These lectures are intended to serve as a sequel to the course delivered in the University of Aberdeen some ten years previously. If at that

<sup>2</sup> This JOURNAL, Vol. IX., page 668.

<sup>3</sup> See *Philosophical Review*, Vol. XXI., page 651.

<sup>4</sup> *Philosophical Review*, XXI., page 648.



time I had foreseen that I should presently be favoured with the opportunity to lecture on the *Realm of Ends or Pluralism and Theism* I might well have entitled the earlier lectures the *Realm of Nature or Naturalism and Agnosticism*. There my endeavour was to establish the priority of the idealistic, or—as it seems clearer to say—the spiritualistic standpoint; and here I have tried to ascertain what we can know, or reasonably believe, concerning the constitution of the world, *interpreted throughout and strictly in terms of Mind*. At the outset, this world immediately confronts us not as one Mind, nor even as the manifestation of one, but as an objective whole in which we discern many minds in mutual interaction. It is from this pluralistic standpoint that our experience has in fact developed, and it is here that we acquire the ideas that eventually lead us beyond it. For pluralism, though empirically warranted, we find defective and unsatisfactory; but the theism to which it points is only an ideal—an ideal however, that, as both theoretically and practically rational, may claim our faith though it transcend our knowledge. Such is the meagre outline of the present lectures” (pp. v-vi).

The reviewer will not attempt to fill out this outline for the reader by citation of passages where the author's views are presented in fuller detail. While it is not always well to begin at the end of a book, it would perhaps not be bad advice in this case to recommend that the last chapter be read first. In that chapter the author summarizes the main course of his inquiry and states as positively as may be the results that he seems to himself to have attained, and finally he glances at some topics for further reflection. A preliminary reading of that chapter will serve to give a general idea of the goal to which the author is leading through what at the time may seem devious paths of subtle argument.

These arguments it is manifestly impossible to present here. Whether they are valid or no is not the fundamental question. There is a more fundamental question, and that is whether all this argument may not be vitiated, so far as it leads to the ultimate conclusion, by reason of the fact that it presupposes the establishment of “the priority of the idealistic or the spiritualistic standpoint.” If “Naturalism and Agnosticism” has made good its fundamental contention that naturalism is ultimately untenable, then we may well inquire what sort of spiritualism we shall adopt. If it has not, then we may feel that such an inquiry is premature. In other words the present work has all the value and (may one add?) only the value of a sequel. To the idealist, therefore, the thorough discussions in the volume are sure to appear of great importance. To those who are not idealists the book will appeal as presenting an interesting variant of a mistaken or at least a doubtful theory. But whatever may be the judgment we finally pass upon this type of spiritualism, it is a distinct gain to philosophical thought to have before us a spiritualism that is less dogmatic than the idealism of Royce. Royce endeavors to prove that his philosophy is the necessary view of the world. Ward recognizes that his spiritualism is largely a matter of faith. Royce knows that there is an Absolute Experience in which all the evils of life are eternally transmuted into good. Ward believes—but his expression of belief makes it seem more

like hope—that there is a growing harmony of free interacting agents, and that good and more good will be the outcome, obtained through the guidance and support of a “finite God.” God’s finiteness, however, does not for him imply God’s imperfection. A finite God means “all that God *can* mean, if God implies the world and is not God without it: it means a living God with a living world, not a potter God with a world of illusory clay, not an inconceivable abstraction that is only infinite and absolute” (p. 444). God’s finiteness is his self-determination in creating free spirits, whose freedom sets limits to Himself. Ward’s spiritualism is thus a form of idealism that will undoubtedly find welcome where Royce’s absolutism may seem oppressive and tyrannic and even anti-moral.

One reason why “Naturalism and Agnosticism” seems to have failed to prove naturalism untenable may perhaps be referred to here, inasmuch as the fallacious argument is restated in the volume now before us. “As naturalism claims to approximate to a complete formulation of this phenomenal order, so spiritualism may claim to approximate to an interpretation of the underlying reality; but it will have this advantage, that while it may be possible, setting out from mind, to account for mechanism, it is impossible, setting out from mechanism, to account for mind” (p. 18). This impossibility is hastily taken for granted; the haste is shown in the assumption that naturalism can not appropriate to its own uses the conception of epigenesis. If “the so-called evolution of the world is really epigenesis, creative synthesis,” which “implies continual new beginnings” (p. 270), why may not a first appearance of mind be one of these new beginnings in a natural world? If in a world of free interacting agents there may be a heterogony of *ends*, why may there not be in a naturally evolving world a heterogony of *effects*? The answer presumably would be that the only causality naturalism can recognize is *mechanistic* causality. But what is mechanistic causality? If it be the kind of causality that has figured largely in the history of naturalism, according to which the material can beget only the material, the natural emergence of the spiritual from the material would be inconceivable. But why should the naturalistic conception of causality be so restricted? If spiritualism does not cease to be spiritualism in spite of the great transformation it has undergone from Leibnitz to Ward, why may not naturalism be equally transformed and yet remain naturalism? These questions are not asked with a view to leading up to an answer on the spot. They are merely intended to suggest that possibly old-fashioned naturalism and new-fashioned spiritualism do not preempt the field to the exclusion of a new-fashioned naturalism.

Before closing this brief review, its writer wishes to question whether Professor Ward’s severe strictures upon Professor Howison’s views are deserved. Professor Howison is, as we all know, well equal to the task of defending himself; but there are some attacks that imply misconceptions so far-reaching that defense would involve a full restatement of the views assailed. Whether such a restatement seems called for now in this case, Professor Howison alone can decide. The reviewer however feels that a personal loyalty makes it incumbent on him to caution the reader against

hastily accepting Professor Ward's interpretation of Professor Howison's position. He is convinced that only a thorough-going misconception can account for the tone of the polemic contained in the second Supplementary Note (p. 455).

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*English Philosophers and Schools of Philosophy.* JAMES SETH. New York: E. P. Dutton and Co. 1912. Pp. 372.

"The aim of this volume is to trace the chief stages in the development of English philosophy, through a study of its leading representatives in their relation to one another and to the general movement of English philosophical thought." One might infer from this that the work was merely a selection from a larger history of philosophy, but, as a fact, two features of its plan serve to distinguish it. First, there is a consistent attempt to emphasize the dominant characters of English thought as they reappear in successive thinkers—the "experiential" strain, the interest in the problem of knowledge, above all, the subordination of the speculative to the practical motive. In this picture of a nation thinking lies the chief interest of the book. Secondly, Professor Seth has preserved the unity of the composition by dwelling upon the outstanding figures and refusing to crowd the canvas with minor characters. The method adopted has been to introduce each chapter by summarizing the logical connection of the doctrines of the individual school or philosopher with the results of preceding reflection and then to provide, largely by dexterous quotation, a somewhat detailed, yet condensed account of those doctrines. These introductions, it may be said, are admirable pieces of work and one would willingly have had more of them at the expense of some of the detail. The author's assignment of his space may indicate the distribution of his attention. In a total of 372 pages Bacon has 35, Hobbes 22, the Cambridge Platonists 12, Locke 28, Berkeley 25, Hume 37, the Moralists 38, while the nineteenth century has 117, of which idealism receives 48. It is obvious that criticism of such a work as this must confine itself to matters of selection and arrangement. It may be said that the main purpose of the author has been achieved. One is left with a vivid impression of the English spirit as revealed unmistakably in its philosophy. But the impression is as unlovely as it is vivid. For the development of thought here outlined is indicative less of the growth of a system of ideas than of an unconquerable insularity of mind, an insularity in which, when one considers such an expanse, unbroken save by Berkeley, of the practical, the prosaic, and the pedestrian, one finds nothing to admire. No palliative phrases, "rugged independence" and the like, can conceal the native lack of imagination.

A doubt remains as to the success of the undertaking to regard "English Philosophy as a form of English Literature." Presumably the requirement of the series was a hard one. It is difficult to know how one should treat the work of Herbert Spencer or of Mr. Bradley, for example, as literature. Still something more might have been done in this direc-



tion than a few scattered and perfunctory remarks on style. Surely it is not fantastic, for instance, to see a close connection between the eighteenth century poet's love of the conventional epithet, of the formal, the pseudo-classic and the eighteenth century philosopher's decent acquiescence in the limitations of his knowledge. For Hume the ideal is "a correct judgment which—avoiding all distant and high enquiries, confines itself to common life and to such subjects as fall under daily practice and experience; leaving the more sublime topics to the embellishment of poets and orators" precisely because we can know so little of that world beyond us. When Pope turns nature into a formal garden, may we not see at work a similar dread of "enthusiasm" before the unknown? There may be no evidence in support of such a suggestion, but considerations of this kind might serve to bring philosophy and literature into a closer relationship than the present volume establishes.

One further comment may be added. The method of exposition by copious quotation from the original sources, although it inspires confidence, creates a feeling of discomfort, as of crumbs in the bed. The quality of smoothness is wholly absent. Where the discussion enters into details this feeling tends to magnify our estimate of their mass, whereas, except in the case of the chapters on Bacon and John Stuart Mill, we need just the opposite: namely, some simple whole view of the individual thinker.

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## JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. July, 1912. *Pourquoi l'espace a trois dimensions* (pp. 483-504): H. POINCARÉ.—Analysis situs in relation to the determination by experience of our space as three dimensional. *Ch. Secrétan, sa vie et son œuvre* (pp. 505-515): M. MILLIoud.—The only metaphysician that romanticism has produced in France; his thought was living because it was lived, and an exact idea of his philosophy can not be had apart from his biography. *Les idées cosmogoniques modernes* (pp. 516-537): É. BELOT.—A treatment of cosmogonic theories as to their progress toward truth and a discussion of the possibility of finding a criterion of value, the application of which would be a condition of progress. *Études critiques. La philosophie des mathématiques de MM. Russell and Whitehead*: H. DUFUMIER. *La philosophie de Georg Simmel* (1er article): A. MAMELET. *Questions pratiques. L'éducation sexuelle*: M. DJUVARA. *Supplément*.

REVUE DE PHILOSOPHIE. July, 1912. *Névrose et Mysticisme. Sainte Térèse relève-t-elle de la pathologie* (first article) (pp. 5-32): A. HUC.—Orthodox mystic phenomena are not to be explained as morbid psychological states. An examination of the modifications of the sensuous experience of the mystics shows that their goal, inspiration, method, and results are different from those of fanatics. Mystic exaggerations are not caused by sensuous mechanism, and do not show disorganization, but harmony of psychic forces. *L'univocité scotiste* (first article) (pp. 33-44):



S. BELMOND. — The being of God is shared by his creatures only by analogy. Duns Scotus is not in essential disagreement with Thomas. The views of Petazzi are attacked. *Revue critique d'histoire de la philosophie antique*. —II. *L'orphisme et la question Hippocratique* (first article) (pp. 45–72): A. DIÈS. — A review of the recent literature on the influence of orphic and scientific ideas upon pre-Socratic philosophy. Joël exaggerates the orphic influence. Authorities date the orphic hymns variously, from the second century B.C. to the fifth A.D. Littié is the basis for the earlier work on the Hippocratic texts. *Les invalides moraux* (pp. 73–84): R. VAN DER ELST. — The scholastic view that morality and intelligence are not separable functions is correct. Moral weakness is accompanied by intellectual disorder and must be treated by intellectual repair. *Les éléments constitutifs de nos sensations. Leurs rapports* (pp. 85–94): F. CHOVET. — The affective and representative elements are inseparable in our sensations and perceptions. The quality of resistance assures us of the reality of external objects. *Analyses et comptes rendus*. F. C. S. SCHILLER, *Formal logic a scientific and social problem*; E. N. HENDERSON, *A textbook on the principles of education*; M. VAUTHIER, *Essais de philosophie sociale*; A. DE POULPQUET, *L'objet intégral de l'apologétique*; B. ALLO, *La paix dans la vérité*; T. WEHRLÉ, *La methode d'immanence*; TH. CREMER, *Le problème religieux dans la philosophie de l'action*. *Notes bibliographique. Recension des revues et chronique*.

Brehaut, Ernest. An Encyclopedist of the Dark Ages: Isidore of Seville. New York: Columbia University Press. 1912. Pp. 274.

Culler, Arthur Jerome. Interference and Adaptability. Archives of Psychology, Number 24. New York: The Science Press. 1912. Pp. v + 80.

De La Vaissiere, J. Philosophia Naturalis. 2 Vols. Paris: Gabriel Beauchesne. 1912. Pp. xix + 343 and xix + 399.

De La Vaissiere, J. Elements de Psychologie Experimentale. Paris: Gabriel Beauchesne. 1912. Pp. xiv + 381.

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Whetham, William Cecil Dampier, and Catherine Durning. Science and the Human Mind. New York: Longmans, Green, and Company. 1912. Pp. xi + 304. \$1.60.

## NOTES AND NEWS

THE twenty-first annual meeting of the American Psychological Association was held under the presidency of Professor Thorndike at the Western Reserve University in Cleveland, December 30 to January 1. The attendance was above the average. The program of papers was very full, and included sessions devoted to experimental, comparative, educational, and applied psychology, as well as general psychology. A pleasant innovation was a dinner, shared by seventy of those in attendance, immediately preceding the presidential address on Tuesday evening. The following officers were elected: Professor Howard C. Warren, of Princeton University, President; Professor J. W. Baird, of Clark University, and Professor Madison Bentley, of the University of Illinois, members of the Council to serve three years; and Professor Shepherd Ivory Franz, member of the Council for one year to fill a vacancy. Professor W. V. Bingham, of Dartmouth College, continues as Secretary.

PROFESSOR HENRI BERGSON, of the Collège de France, will lecture at Columbia University during the first three weeks in February. He will deliver six public lectures in French, on the general topic "Spiritualité et Liberté," on February 3, 4, 10, 11, 17, and 18. He will also give six lectures in English, designed primarily for the students and instructors of the department of philosophy at Columbia University, on the afternoons of February 6, 7, 13, 14, 20, and 21. The general subject of these lectures will be "The Method of Philosophy: Outline of a Theory of Knowledge." In addition to his engagements at Columbia, Professor Bergson will lecture at Princeton and at Harvard.

DR. C. E. FERREE, associate professor of experimental psychology at Bryn Mawr College, has been appointed director of the psychological laboratory. A separate building has been granted him by the college to be used exclusively as a graduate laboratory of experimental psychology. This building will be fitted up for research work alone, and will, when finished, consist of eight rooms. One or more optics rooms will be provided, furnished with sky-lights, diffusion sashes, etc., for the control of illumination, and with concrete piers running to the ground to give a vibrationless support for delicate apparatus. The regular services of a mechanician will be available for this laboratory.

PROFESSOR R. J. KELLOGG, of James Millikan University, has begun to issue in periodical form numbers of *Studies in Linguistic Psychology*. Two numbers have already appeared. The subscription price is \$1.25 per volume of four numbers of 64 pages each, and orders may be sent to Messrs. G. E. Stechert and Company, 151 West 25th Street, New York City, or to Professor Kellogg at Decatur, Illinois.

THE following appointments have recently been made in the department of philosophy at Harvard University for the year 1913-14: Professor R. F. Alfred Hoernlé and Hon. Bertrand Russell as lecturers, Professor Hoernlé to give regular courses during the first half year and Mr. Russell during the second half year, and Dr. B. H. G. Fuller as instructor.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### PERCEPT AND OBJECT IN COMMON SENSE AND IN PHILOSOPHY

#### I

#### THE COMMON SENSE DOCTRINE AND ITS SIGNIFICANCE

WE have had, within the past few years, much discussion of perception and its object. The problem has betrayed itself as a parting of the ways—as significant for what the solution accorded it may result in—and not merely as in itself furnishing material for the exercise of intellectual curiosity. The realists, recently grown very bold, have urged their doctrine, or the somewhat differing varieties of their doctrine, with earnestness and insistence. The idealists, not wholly united, as is quite natural, have, nevertheless, made something like common cause, and have defended themselves with energy. The pragmatists, though they may call themselves realists, do not seem to have been precisely in either camp. Where so many clever men, of different standpoints, consent to give their attention to the one problem, and where they work, not in isolation, but stimulated by dispute, and conscious of the points of agreement or of difference that characterize them, it would be strange if the various facets of the problem under discussion were not presented to us with a good deal of clearness. And if there is a pronounced flaw in any facet, it seems unlikely that we should be allowed to be inattentive to it.

So many have written, and many have written so well, that the difficulty of presenting the problem in any distinctly new aspect must make itself acutely felt. Has not every facet already been inspected? Has not the importance of each been insisted upon? Then why waste effort in trying to bring before the reading public a new one?

Fortunately, such is not my task. I am concerned rather to do something which has, I think, attracted less careful attention than



the exhibition of the significance of individual aspects of the problem. I am concerned to inquire whether, if we take into consideration *all* the aspects, trying to do justice to each, and to avoid exaggerating the importance of each, our problem may not become less an apple of discord, and more a problem whose reasonable solution need not leave any of us wholly discontented and humiliated by the consciousness of unredeemed error.

My way of approach to this task lays itself open to the charge of bringing philosophy down into the market-place, where we do not usually look for philosophy. What I have to say in my justification I shall say a little later. Here I shall begin at once with what I shall call the common sense doctrine of percept and object. I wish to call attention to its many-sidedness, and to point out that the elements in it do not appear, on the surface, at least, to be wholly in accord with one another. This lack of harmony between the articles of his creed does not seem to distress the plain man. It does not embarrass him in his dealings with things. It may cause acute distress to the philosopher who agrees with him heartily upon the one point, but can not see how he can conscientiously give assent, at the same time, to another.

I hope I may be permitted to include under the common sense doctrine opinions formulated, half-formulated, and ready to be formulated. This is rather loose, to be sure, but common sense is, in a sense, a loose and vague term. If a man can act, but remains absolutely blind to what he is doing when he acts, we can not say that he has any doctrine at all. We can hardly affirm that men generally are in this state. Most of them appear to be dimly aware, at least, of what they are doing when they are dealing with the things about them. Some, even of the unlearned, have rather definite opinions—they have arrived at something like a formulation, even though it be not couched in very general terms. And a man's mind may hold in solution opinions which will not take the form of a precipitate unless some definite question be asked and he be pressed for an answer.

But, if the asking of the question at once results in the precipitate; if the man under interrogation claims something as his opinion; if he insists that he has always known the truth in question—does it seem just that we should dwell much upon the fact that he has not before been led to formulate his belief in a general way? The fact that he does not speak as a philosopher, and that he may be unaware of the mutual consistency or inconsistency of his statements, as well as of the consequences which may be deduced from his admissions, speaks rather for the spontaneity and impartiality with which he attempts to describe what seems given in his experience.

I do not mean to speak dogmatically touching the articles of the



common sense doctrine. What I put forward is offered for criticism. It is not the expression of a fixed conviction which I am unwilling to modify in the face of evidence. Such as it is, let us look at it critically.

I. Does not the plain man hold that percept and object may vary independently; that the former may cease to exist while the latter continues to exist; that the two may have different times of being; that to each must be assigned its own place in the system of things; that the percept may be relatively simple while the object is very complex?

If he holds all this, does he, or may he, also hold that when percepts are given in experience, objects are given in experience? Does not his doctrine exclude all talk of the numerical identity of percept and object?

That the plain man does take the positions indicated above appears undeniable, when we remain in the region of the concrete, and apply ourselves to simple illustrations. Thus,

1. Does he not accept the commonplace fact that walking around a table and looking at it will result in a whole series of different percepts, while the table perceived remains unchanged?

2. Is he not aware that the percept may cease to be—that he may close his eyes—while the object, the table, continues to exist?

3. Does he not know that an occurrence may be perceived after it has ceased to exist? that he may hear a sound long after the blow has been struck? that he may see a star which no longer shines?

4. Does not the plain man, if interrogated, refer the percept to “the mind,” and the mind to the body? Where does he put the table perceived?

5. Does any man who exercises ordinary common sense ever suppose that he perceives the whole of a table at once, inside and outside, back and front? or does he recognize that the table is something far richer and more complex than any percept of it?

It seems, then, that common sense accepts percept and object as two, making no effort to get on without either; and it appears as clear that it treats these two in distinctly different ways. Nor does it seem indicated that it regards these two as given in experience “side by side.” Men do not normally see double. Does common sense, then, *implicitly* deny that the *object* is immediately given in experience? Or does it *implicitly* deny the *percept*? On the surface, it does not appear willing to do either.

II. May we not say that common sense *tacitly* accepts the fact that we can know things *only as they appear to us*? And is not this a virtual denial that objects perceived are independent things?

What plain man is ignorant of the significance of the senses and

brain in our knowing of things? We find it natural that eyes should reveal colors, ears sounds, and finger-tips something different. Who does not know that, where a given sense is lacking, objects can not be perceived under the guise appropriate to that sense.

And certainly no plain man living ever attempts to know objects as unknown—as “out of the cognitive relation,” whatever that may mean. I apologize for the use of the technical expression in discussing anything so little technical as common sense. I mean only to indicate that, whatever the conditions of our knowing may be, objects known appear to be accepted by men generally as none the worse for their being known, and as quite capable of satisfying all the theoretical and practical purposes with which investigations are undertaken.

Does it follow that common sense regards the object given in experience as a something dependent upon our own constitution? Would it be willing to maintain that we can know things only as they appear to us, and that they appear to us as they do because we are what we are? May we contrast with such a knowledge of things the knowing of things independently, and regard the latter as a conceivable, if unattainable, extension of knowledge?

III. He who dwells exclusively upon what has been said so far, might easily be led to maintain that common sense accepts, tacitly, at least, that percepts are not the same as their objects, but are numerically distinct; that we know objects only through percepts; that the latter are dependent upon our constitution, and must take their color from us; and that, consequently, we may not say that objects independent of us are directly given in experience. This seems to make common sense subjectivistic.

But, surely, he who feels impelled to maintain that this is the common sense doctrine must recognize the necessity of further maintaining that it is accepted only tacitly and unconsciously by the plain man to whom he attributes it. For, stated boldly and explicitly, it appears to arouse opposition and irritation. The plain man is driven to protest, somewhat as did Thomas Reid. And even if no active protest is elicited from him, in the cases where he is let alone and is not rendered anxious about the possible consequences of his admissions and assumptions, do we not find him making other assumptions quite different in their suggestions from those indicated above?

Thus, does he not maintain that, in perceiving, he is always experiencing *objects*, not copies, not images, not representatives of any sort, but the objects themselves? Are not these the objects that may remain unchanged, although the percepts vary? that may continue to exist when the percepts go out of being? Is not this an assertion of the independence of the object given in experience?

The plain man is, to be sure, quite ready to admit that, under given circumstances, he may enjoy a poor view of the object. But what is his remedy for this? Is it not to obtain a better view? And it is a view *of the object* that he seems to want. The fact that it is a *view* of the object never seems to trouble him, or to rob him of the object itself. Suppose we tell him that, in perceiving, he can never, under any conceivable circumstances, get anything but "views," and that such views are never the object, and may all be quite unlike it. Will he be inclined to cast about for some other method of getting at the object, or will he simply disregard our insinuations and go on doing what he did before?

It seems too much to expect him to admit that he has never known objects. He has always known that he has experienced them under a variety of aspects, but this does not appear to have prevented him from finding out a great deal about them. He has distinguished between delusive appearances of objects and, as he expresses it, objects as they really are. He has seen the man of science deal with things as he does, but more systematically and thoroughly, and he has not found him embarrassed by the fact that observation results in views of things. Objects have been described as though they were given in experience. No embarrassment has resulted from this treatment of them. They have been described, they *are* described, in a multitude of scientific books, and no mention has been made of the fact that the books in question are dealing only with "views." They seem to be describing objects, and it seems to be assumed that the objects have been *observed, experienced* by some one.

May we expect the plain man to recognize the situation as a "predicament"? What sort of a predicament is it that occasions no one any inconvenience, and never prevents any one from doing anything that he wants to do? And, to recur to a point touched upon a little above, can we expect the plain man to feel that he is put in a "predicament" by the fact that he can not experience things except as he experiences them, or describe them except as they are revealed to him? Is he compelled to undertake this peculiar task, if he would describe things *as they are*? Is it properly a task to be performed either by the plain man or the man of science? Neither appears to have the slightest desire to undertake it, nor does either appear to consider his account of objects incomplete merely because he has not supplemented his account of objects as known by an account of them as he does not and can not know them.

The plain man, then, whatever else he believes, seems to believe that, not percepts merely, but *objects*, are given in his experience—the objects which he distinguishes from percepts, which may remain unchanged though percepts vary, which may continue to exist when



percepts of them drop out of being. Shall we put this down as a part of the common sense doctrine?

IV. Again, admitting all that has been said about the plain man's consciousness of the part played by the sense-organs and the nervous system in the perception of objects, could we induce him to acquiesce in the statement that a man, in knowing an object, *creates* it wholly or partially? Would he even be willing to admit that the object is *changed* in becoming known?

Thus, we all know that the experience which a man has of the contents of a given room must be different from the experience of the same objects enjoyed by a dog, and very different from the experience of an insect. Is it proper to say that a man, in knowing a shelf of books, makes it over, *creates* the object of his percept? Would the average man not read in philosophy be ignorant of the fact that things may seem different to different creatures? Would he be impelled by his knowledge to assert that each creature makes its own "things" or objects, when he is confronted by something as concrete and definite as a shelf of books?

A shelf of books can undoubtedly be made. It can easily be changed in a variety of ways. But can a man be said to make it, when he does nothing but open his eyes upon it? Can he be said to change it, when he allows his glance to pass over it, first from left to right, then from right to left? Common sense recognizes, does it not, that desire and purpose have much to do with the nature and order of our percepts? Is any man ignorant that the experiences we have are often determined by what we desire to look for and what we resolve to do? But does the fact that we vary the nature and order of our percepts necessarily mean that we are changing the objects we perceive? I see six dots on a bit of paper before me. I can think of them as  $2 + 2 + 2$ , or I can treat them as  $3 + 3$ . When I pass from the one operation to the other, does anything happen to the dots? Are there less or more of them? are their actual relations to each other changed? One may read a book with the deliberate intent of correcting typographical errors, or one may read it with a view to comprehending and criticizing the doctrine it embodies. Does common sense hold that the typographical errors made manifest in the one reading become nonexistent in the second? Or does it hold that they all remain unaltered unless they are changed in some quite different way?

Does this not indicate that common sense recognizes that the object is *independent* of the percept, and is revealed in experience as thus independent? that the nature of the object and the changes which take place in it are open to observation and need not be con-



founded with the nature of the percept at any given time, or with merely perceptual changes?

Let me summarize very briefly:

1. Does not common sense deny the numerical identity of percept and object, and recognize that they may vary independently?

2. Does it not, in tacitly accepting the significance for perception of brain and sense organs, implicitly hold that we can know things only as they seem to us?

3. Does it not repudiate the doctrine that we are shut up to mental representatives of things, and hold with a good deal of tenacity to the opinion that the "things themselves" are immediately given in perception?

4. Does it not insist that we can gain by observation the distinction between changes in our percepts and changes in their objects? Is this not a recognition of the independence of objects as given in experience?

Suppose that all these questions are answered in the affirmative. I should like to ask: (1) Are the answers unequivocal? (2) Are they mutually consistent? (3) Do they seem to be justified by fact, or is common sense plainly in error?

I have no disposition to treat the plain man as an oracle. But he may be regarded as material to be turned to account by the critical. In some fields his opinion is quite valueless; in others it is not. The distinction between percept and object is drawn first in our dealings with the familiar things of our every-day experience. We have not had to wait, before making it, for information which was brought us only with the progress of science. In the days of Thales, and long before them, men were compelled to deal with objects. What would have happened to them if they had been unable, in practise, to distinguish between percept and object, and to know when a given change in their experience indicated a change in this or that object, and when it did not?

It may be objected that the plain man has a right to *use* common distinctions which he finds in experience, but that he should eschew formulation. What right has he to a doctrine?

I answer: It is far from evident that he does his work in complete blindness. I am myself inclined to regard him as a witness by no means to be despised. Our ultimate appeal should be to common experience, and not to common sense, which, it must be admitted, implies something like a formulation of what may be revealed in common experience. But the disputes of philosophers make it evident that experience is an elusive thing. In helping us to a critical view of it, even this first vintage, this rough formulation, furnished by the opinions of plain men, may not be without its uses.

We can not assume men to be wholly blind to the distinctions that they are compelled to draw every day, and some of which they can only draw correctly after giving much thought and pains to the matter. It remains for the philosopher to sift their statements, to weigh the justice of each, and to look into this question of their mutual consistency. I shall turn to the philosopher in the next paper.

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## STUDIES IN THE STRUCTURE OF SYSTEMS

### 4. THE GENERATING PROBLEM<sup>1</sup>

THE fight for postulates and against axioms is a fight for freedom in mathematics and science. It is this aspect which thus far has been dominant in our discussion. Unlimited possibilities are therewith opened up; by surrendering the idea of "self-evidence" as a necessary requirement which the starting-point of "deduction" must satisfy, mathematicians have not only deepened their insight into the real relations between the propositions of a system, not only perfected their initial sets, not only increased the rigor of their deductions: the real logical requirements which a deductive system should satisfy to be acceptable have come to light;<sup>2</sup> for only if many accounts are possible can there be selection.

So far as the actual work in mathematics is concerned, nothing further, it would seem, need be added to what has already been said on this point. But for a theoretical account of the deductive system form it is insufficient merely to speak of "postulates" and the "postulate method." This theoretical insufficiency will become apparent whenever the method is applied to fields that have not already been worked over frequently; and it evinces itself in certain puzzling questions which sometimes trouble even the mathematician. That we can, to a degree not yet determined, but apparently unlimited, interchange theorems and postulates, *i. e.*, that the distinction between postulates and theorems is not inherent, not absolute, but relative to the order in a particular system, all this must be maintained. But, if the postulates appear as merely as-

<sup>1</sup> Some of the material of this paper was presented to the American Philosophical Association at its meeting at Yale University, in January, 1910. In the present paper I limit myself to a consideration of the "generating problem" in a *deductive* system.

<sup>2</sup> Cf. my paper, "Critique of Cognition and its Principles," this JOURNAL, Vol. VI., page 281.

sumed, are they, therefore, purely *arbitrary*? And if they have no warrant of their own, how can a deduction from them add anything to the validity of a proposition? What is the real function of these postulates?

Some at least of these questions demand an answer in a study of the structure of systems; we shall revert to them in the examination of the nature of *proof* in a deductive system. The difficulty for which the present paper shall try to find a remedy may be stated somewhat as follows. When we establish a set of postulates for "Euclidean plane geometry" we can not use propositions of "algebra." But if postulates are merely "assumed," *why can we not assume anything whatever and develop a system?* Of course, the concept of "truth" enters here, and in so far our question must be answered in "critique of cognition"; but quite apart from the question of "truth," *we require a principle which will determine that certain propositions, true or otherwise, can not by any possibility be amongst the particular set of postulates.* And if we speak of postulates merely as propositions from which the system starts, this question is left open. We need a principle which will demarcate the field in which the "postulates" are assumed.

It is easy to see how so important a question could have been disregarded in the work of mathematicians. They were never trying to establish a set of postulates as such, but a set of postulates of "algebra," or "geometry," etc. *The field was understood as being already well determined,* and the set of postulates determined in reference to it. *But what did determine the field?*

Such questions lead us to conceive the deductive system form in a new way. Thus far we have had in mind propositions in relation to other propositions, forming a system in their relationship. But now we come to conceive of propositions as related, not merely to other propositions, such as the postulates, but to a distinct class of logical entities which may be called "*problems.*" We conceive every proposition, and every system of propositions, as definitely related to a "problem" of which it is the "*solution.*" And this relation of a proposition to its problem is essential not only for the logical meaning and bearing of the proposition, and not only for the determination and limitation of its "truth," but also for a complete account of the *structure* of a system. It is this structural aspect of the concept of "problem," restricted to *deductive* systems, which shall occupy us for the present.

By "problem" I do not mean a mere "question," not an expression of "ignorance," or "wonder," or "desire to know." All these are expressions for *subject-relations*. They indicate problems which



we meet, or set ourselves. The term "problem" shall here designate a logical entity distinct from the subject-relation into which it may enter to me or to you. I may "set" myself a problem, I may "acknowledge" a problem, and thus enter into subject-relation to it; however vital this relation may be for me or for the problem, what a problem is is distinct from *my relation to it*.

This comes out clearly when we treat so-called "impossible" problems. A problem may be "impossible" for me in that I can not find a solution for it. But this psychological impossibility does not constitute a logical impossibility, even if it is extended so as to include *all* (present, past, or future) human beings; *mere extension of a "psychological" relation does not make it "logical."* Numerous problems in mathematics are still (psychologically) "impossible," though in the case of many we can prove that they are "logically" possible. That, on the other hand, a logically "impossible" problem may be psychologically possible the French Academy experiences every year many times when new, and new "solutions" of such problems as the "quadrature of the circle" are presented to it by hopeful aspirants to immortality. That these "solutions" are "logically" incorrect deprives them apparently little of their "psychological" correctness, clearness, evidence, certainty.

But if we do not define "problems" in terms of our "ignorance," how shall we define this logical entity to which a proposition is said to be related? I shall attempt to answer this question in terms of *relation*, and my procedure will be an analysis of what is meant by "problem" in mathematics. It may, however, be well to state that this "analysis" is, at bottom, a "construction": it is the construction of a solution to a particular problem, namely, what a problem is; and this solution is to be submitted, so far as its truth is concerned, to the criteria of critique of cognition.

Problems are "felt" in various degrees of clearness, and as such may control our actions, be it in the practical concerns of every-day life, be it in purely theoretical considerations. The mathematician, working through a particular field of his science, may "feel" that something is wrong, may "perceive" that a certain proof makes tacit assumptions, and this "feeling," this "perceiving" may direct him to search for the assumption, to correct the error. But problems are amenable to logical investigation only when they have been *stated*, however imperfectly. At all events, we shall deal here with problems only in so far as they are stated; and our question is: how are statements which represent problems distinct from those which represent solutions?



If I state the problem: what is the shortest distance between two points in the Euclidean plane? I answer: the straight line. What have I done? The "what" merely fills a blank; but it indicates the *locus of a concept*, namely, straight line. I might have put the problem in the form: " $x$  is the shortest distance between two points," if I had made the agreement that the letter  $x$  shall indicate the locus of a concept. The form of a "question" is therefore merely a grammatical device; and our ready understanding of this device covers up an essential feature of the problem-statement, namely, that it is in itself *incomplete*: it does not "propose" anything, it does not "assert" anything; *it requires another statement for its completion*. But it states a relation between concepts by which another concept is determined.

This can be analyzed still further, and another example may be more serviceable: Which is the larger of two chords in a circle? The definite relation, namely, between the sizes of two chords in a circle;  $x$  is the one nearer the center. This statement of the problem is very imperfect; what it is meant to bring out is this: the problem states a definite relation, namely, between the sizes of two chords in a circle; but whilst the statement: chord  $a$  is larger than chord  $b$  would be complete in itself, *i. e.*, a proposition, the addition of the  $x$ , which transforms this proposition into a problem, leaves the whole statement incomplete; it becomes a proposition again only after the solution is added; and this is done by introducing a new relation, namely, "distance from the center," and asserting that these two relations "size of chord" and "distance from center" belong together. *The problem is this demand for the establishment of a relation between an initial relation and a new relation "determined" by it.* And this seems to be essentially the logical character of any problem.

Instead of speaking of an initial relation it would be more correct to speak of a *system* of (one or more) initial relations which the problem states. For even in the example given we have not only the relation " $a$  is greater than  $b$ ," but also " $a$  and  $b$  are chords in a circle," *i. e.*, straight lines in definite relation to a circle. These relations are explicitly stated or indicated; others are merely implied. Thus it is implied that the stated relations obtain in a "Euclidean plane," which expression is itself merely an indication of relations explicitly stated in the "postulates." And it is impossible to disregard these implied relations without completely changing the problem. The importance of these implied relations makes it imperative that somewhere they ought to be explicitly stated and that the reference to them be unequivocal. The logical tendency of the whole work in modern mathematics, and

the inspiration of so-called mathematical logic, is to make explicit the implicit assumptions. This is at bottom what is meant by the slogan, opposition to intuition.

Let us designate the system of relations explicitly or implicitly stated in a problem by  $R_p$ , and the relations introduced by the solution  $R_s$ , then we may write

$$R_s = F(R_p),$$

i. e.,  $R_s$  is a function of  $R_p$ . We shall have to examine this functional relation between  $R_s$  and  $R_p$  in a later paper; here it is important to state at least one of its properties: it is not necessarily a one-one relation, i. e., given a system  $R_p$ , a system  $R_s$  is not necessarily uniquely determined, even if the problem is "well determined." I call a problem "well determined" if of every system of relations it is determined whether it is a solution of the problem or not. Well-determined problems are, then, of two classes, which may be called (1) *uniquely determining problems*, or *problems with uniform solutions*, and (2) *multiply determining problems*, or *problems with multiform solutions*. In the first case, one and only one solution belongs to the problem; in the second, the problem has two or more solutions. And the important question arises: provided a problem is well determined, can it always be transformed into a uniquely determining problem? And what requirements must a uniquely determining problem satisfy?

The recognition that there are problems with multiform solutions is of very great importance, particularly as the naïve mind, owing to a lack of fertility, is inclined to believe that any problem presented, if it is well determined, must be uniquely determining; and, when one solution is found, holds this to be the *only* possible solution. The strength of our conviction of the truth of a solution is often inversely proportional to our ability to find other, differing solutions. This was true until recently of such problems as the establishment of a set of postulates of geometry, of algebra, or of principles of mechanics; and nothing seems more startling in the outcome of the work of intrepid mathematicians than the conviction that most problems of a fundamental nature are multiply determining.

Many problems are multiply determining only improperly; they can be transformed into problems with uniform solutions by slight modifications in the statement of the problem. But even in the case of proper multiply determining problems, a transformation of the problem into a uniquely determining problem is often possible and desirable. This can be done by the addition of limiting conditions, by a restriction of the range of the variables, etc. It is not possible, neither is it necessary, to enter here into a general discussion of the

methods by which this transformation can be effected. But it is important to state that all our problems have multiform solutions, or fall short even of the property of being well determined, unless the following two conditions are satisfied: (1) that the *type* of the solution is determined; (2) that the *critical ideal* of the type is defined. The "type" of a system of propositions, stating the logical properties of a system of logical entities, refers to the *form* as distinguished from the logical *content*. Thus the same content can be stated in distinct forms, such as "mere enumeration," or "deductive system form," etc.; it is these classes of forms which I here call "types"; and the solution of a problem may be required to be of the type of the deductive system form, or of the type of mere enumeration, etc. When a problem is stated in mathematics, the type is usually understood to be that of the deductive system form; but when a problem is stated in physics, the type would be doubtful, as differing types are in use there, were it not that the type required is ordinarily sufficiently indicated by the natural surroundings of our problems. Yet it may always be called a structural fault of a problem if the required type of the solution is left to these suggestions and implications.

From the type is to be distinguished the *critical ideal*. The type is merely the logical form; the critical ideal is the standard by which the logical value of a system is determined. It is necessary that the critical ideal of each type be defined. It is possible that this critical ideal is the same for different types, though it is not necessary that this should be so. For the type of the deductive system form, the critical ideal is now emerging, owing to the persistent work at the logical foundations of mathematics, and in my paper on "Critique of Cognition" I have exhibited a set of criteria defining this ideal. Different solutions of this problem are possible and must be judged by their own test, *i. e.*, they must be "self-critical." It may be possible to include in our set defining the critical ideal of the deductive system form criteria (such as "simplicity"), so that the number of possible solutions is reduced; and it may even be possible to transform the problem by this procedure into a uniquely determining problem. These remarks concerning the effect of the critical ideal on the solution of the particular problem of critique of cognition may serve to indicate the general effect of the definition of the critical ideal of a type on the solution of problems belonging to that type.

We conceived that underlying each proposition is a problem to which it belongs and of which it is the solution; and we saw that this "belonging" is not necessarily a one-one correspondence, in the sense that, given a problem, there may exist more than one solution.



The inverse of this is also true: given a proposition, it may be the solution of more than one problem. Whilst nothing prevents our starting from a proposition and seeking the problem, or problems, of which it is a possible solution, it is more important, and in better harmony with the historical development of science as well as with human nature, to start with *the problem as the primary*, and proceed from it to the propositions which are its solution. We introduce therewith a directional element whose importance will become apparent in later papers. From this point of view we consider a proposition as being a response, so to speak, to a problem; as living its logical life merely in so far as it is a solution; as being "*generated*" by a problem; and problems, on account of this call for definite propositions as their solutions, may be said to generate these propositions. The term "*generating*" would then merely express the logical demand for a solution, which we found to be one of the characteristics of the idea "*problem*." However, it seems convenient to restrict the use of the term "*generating*" problem somewhat arbitrarily, so as to avoid a mere pleonasm. In the sense specified above, *all* problems are "*generating problems*"; I shall, however, apply the term merely to a particular class of problems, which, as "*generating problems*" shall be distinguished from the rest, which I shall call "*special problems*." Let me elucidate what I mean by this distinction.

*Problems cohere*; they may be grouped and classified, in so far as their systems of initial relations contain common parts. The initial relations of a problem may be conceived as *conditions* which make the solution of the problem possible; for, as the solution will change if we change the initial relations, we can say that the *possibility* of the solution is conditioned by these initial relations. If, therefore, several problems contain, amongst their initial relations, a group which is common to all, they form a system whose possibility is conditioned by this common group of relations. This group may itself be conceived as a system of initial relations of a new problem; and we say then that the several problems are *special* problems of the more general problem.

In order to state this more clearly it will be convenient to introduce here the idea of "*realm of a problem*." We arrive at it as follows. A logical realm is determined by a *condition* (or system of conditions); and *vice versa*, to every condition (or system of conditions), belongs a realm in which the condition is "*satisfied*" (provided we include the "*zero realm*" for inconsistent conditions). Now, any proposition is here considered as the solution of a problem, and the initial relations of the problem as conditions; they deter-

mine a realm in which the initial relations "hold" (*i. e.*, in which the conditions are "satisfied"); in this realm, then, the proposition is a solution of the problem; *and if the problem is properly stated, the validity of its solution is restricted to the realm of the problem.* If now the realm of a problem  $P'$  is part of the realm of problem  $P$ , we will say that  $P'$  lies within the realm of  $P$ , that it belongs to the realm of  $P$ , that it is a special problem within the realm of  $P$ , or simply *a special problem of  $P$* . If, in addition, the solution of  $P$  forms a system in the ordinary sense of the word (such as geometry, mechanics, etc.) we shall call  $P$  a *generating problem*.  $P$  is the problem which is conceived as "generating" the system; the system is a possible solution of its generating problem  $P$ ; the "theorems" of the system are possible solutions of special problems within the realm of the generating problem of the system.

Systems are thus taken out of their self-contained isolation; they are not an arbitrary collection of propositions, which, like rocks in a cyclopic wall, form a system by mere conglomeration. Systems are possible solutions of generating problems, and it is the problem which furnishes the organic connection between the various propositions of the system.

It follows from our definition of a generating problem that its distinction from a special problem is not inherent, not absolute. That lies already in the accidental character of what is usually called a "system." Geometry forms a "system"; its problem is therefore called a "generating problem"; but we may also call the generating problem of geometry a special problem within the realm of the generating problem of mathematics. It is quite conceivable that there are special problems which can never be generating problems, and generating problems which can never become special problems; but ordinarily the distinction between special problems and generating problems is merely relative.

Let us apply some of the foregoing remarks to a special case. Suppose the generating problem of mechanics to be given in the form: "to deduce from the properties of material systems which are independent of time, their phenomena which occur in time and their properties which depend on time."<sup>3</sup> We are not concerned here with the question whether this correctly states the generating problem of mechanics, or not. But in this statement are contained important points which in certain respects anticipate the solution: (1) it conceives mechanics as dealing with "material systems"; (2) the initial relations of this particular system of mechanics are "their properties independent of time" ( $=A$ ); (3) the required

<sup>3</sup> H. Hertz, "Principien der Mechanik."

relations which are to be deduced represent "their properties which depend on time" and "their phenomena which occur in time" ( $= B$ ).

But this means: (1) This statement of the generating problem of mechanics determines the realm of mechanics: it is restricted to "material systems"; any problem regarding the properties of material systems will form a special problem in the realm of this generating problem and therefore demand a solution which can be "deduced" from the initial set; and none but these. (2) It establishes a criterion for the distinction between the "fundamental" and the "derived" propositions; this lies in their relation to "time." (3) It determines the type of the solution:  $B$  is to be "deduced" from  $A$ ; the solution shall therefore be in the deductive system form.

The critical ideal is not stated in the generating problem, and need not be; it assumes that the critical ideal of the type has already been defined. Toward the solution of this urgent problem Hertz himself made an important contribution.<sup>4</sup>

What the "principles" ( $= A$ ) are in detail is not stated in the generating problem and need not be stated in the problem itself; neither does it state which "fundamental concepts" will be necessary, excepting that "time," "material system," etc., will either be among them or definable in terms of them.

In a similar way any statement of a generating problem anticipates certain aspects of its solution. But which aspects are anticipated can not be stated in general, not even for a special system such as mechanics; for its generating problem can be stated in many different and still essentially equivalent ways.

The preceding discussion of the meaning and implications of the concept "problem" has anticipated some of the *functions* of this concept. I shall, in what follows, discuss these mainly so far as they pertain to generating problems, though, after what has been said regarding the relativity of the distinction between generating problems and special problems, what applies to generating problems applies with certain natural modifications to special problems also.

*Generating problems are the logical origin of systems.* Socrates urged the methodological importance of "questions," using the  $\tau\acute{\iota} \epsilon\sigma\tau\acute{\iota}$  as the instrument for obtaining *definitions*; Plato recognized the  $\tau\alpha\upsilon\mu\acute{\alpha}\lambda\epsilon\upsilon$  as the starting-point of all philosophizing; *modern philosophers* emphasize the "purpose" which directs our thinking: they all have in mind the *subject-relation* to which the logical entity "problem" more or less closely corresponds. Not so easily recognizable but deeply permeating his whole system is the rôle of the

<sup>4</sup> *Einleitung* to his "Mechanik."



"problem" in Kant's philosophy. Some aspects of it, such as the designation of the "object" as an "*x*," I shall discuss at some other opportunity; but the problem-character of the "ideas" will come readily to mind; their "regulative" use, as distinct from the "constitutive" use, of the "categories" is a very characteristic function of problems. At closer inspection it will be seen that even the "transcendental method" should lead to the generating problem. In Kant's system its fulcrum is the existence of mathematics and Newton's mechanics. If they had indeed the property of "self-evidence" and consequent "undeniability" which then they were believed to possess, Kant's transcendental method would proceed without inherent difficulties. But if *different* sets of postulates can be, and have been, exhibited for mathematics as well as for mechanics, we can not arrive at a system of categories and principles ("*Grundsätze*") by asking: which are the necessary presuppositions of "experience," unless we assert dogmatically that these categories and principles remain *invariant* in the different selections of postulates; for which we have, at present at least, no warrant, and which Kant did not and could not have had in mind when he presented his transcendental method. In the concept "problem" Kant's method finds its real fulcrum; we do not start with the accomplished "fact" of Newton's mechanics to find its necessary presuppositions, but with the *problem* of mechanics, of which Newton's system is one of an indefinite number of possible solutions. Problems generate systems; and the "*postulates*" of a system are the initial relations, are the conditions which make the solution of the problem possible.

*The generating problem is the selective principle which determines the kind of propositions which may be admitted to the set of postulates, and excludes others as by no possibility admissible to the set, in that they do not contribute to the possibility of a solution of the generating problem.* The postulates are, therefore, not "arbitrary," or "mere conventions": they are *necessary*, namely, for the solution of their generating problem. Other sets might be chosen, but some must be chosen if a solution of the generating problem is to be accomplished. All possible sets of propositions are therefore grouped into two classes with respect to a generating problem: those that are possible initial relations of the given problem, and those that are not.

*The generating problem determines what is "given" for the particular system which is its solution.* "Givenness" is never an absolute property of certain propositions, concepts, attributes, relations, or what not. What is "given" in the realm of one generating

problem may be not-given in the realm of another. When I develop a system of geometry from a set of postulates, the postulates are the "given," the "theorems" are not-given; they are to be "found," or "proved." But if I state the problem: "to determine a set of postulates from which Euclidean plane geometry may be deduced," the system of propositions which compose what is called "Euclidean plane geometry," or a certain set of postulates which *defines* Euclidean plane geometry, is the "given"; the new set of postulates is the required solution, *i. e.*, not-given. It is a common prejudice of those who have given little attention to these questions of structure, and who ignore the rôle of the concept "problem," to take it that "sensations" are the "given *per se*." This is incorrect. Sensations may be the given, namely, in the realm of a certain generating problem; in others they are not.

*The generating problem determines what is "essential."* How much confusion has resulted from the endeavor to establish certain propositions, or qualities, as "essential *per se*"! Our whole system of "virtues" has been obscured by this attempt. What is "essential" to a system is determined by its generating problem; it is either one of its "defining" properties (initial relations), or a "necessary consequence" from these. But the "same" system (*e. g.*, "man") has very different "essential" properties, according to the particular generating problem.

*The generating problem determines the realm of the system.* This is perhaps its most striking function, though its full importance does not appear until we come to critique of cognition. I can mention here only that the "truth" of a proposition does not attach to the proposition as such, in isolation as it were, but only in so far as it is part of a system, *i. e.*, relative to a definite generating problem. And the "truth" of a proposition does not extend indefinitely far, but only as far as the realm of the generating problem extends. To put this into language familiar to students of the history of philosophy: Kant's main undertaking in his "Critique of Pure Reason" was to demonstrate that the "truth" of the principle of causality does not prohibit the "truth" of the principle of freedom, in that the realm of the principle of freedom lies wholly outside the realm in which the principle of causality is valid. Causality is restricted to "experience"; freedom lies outside of "experience." But "experience" designates here merely a generating problem, and what Kant tried to establish is that the generating problem of "experience" is distinct from the generating problem of "ethics." The term "things in themselves," the distinction between "ideas" and "categories," between "regulative principles" and "constitutive principles," are merely details of Kant's special solution of the

problem of separating these two generating problems. Kant has indeed sufficiently indicated the rôle of the concept "problem" in his undertaking; but it is obscured by the psychological turn which he gave his solution.

But if the "truth" of a proposition is thus restricted to the realm of its generating problem, *the separation of generating problems becomes of the utmost importance*; and my own tentative procedure in the beginning finds here its structural justification. It may be opportune to call attention here to a procedure in mathematics which is in harmony with this requirement of the separation of generating problems. It is usual, in mathematics, to state propositions with conditions which definitely restrict their validity; *i. e.*, mathematicians take at first a rather narrow but well-defined realm (or, to put it differently, they limit their generating problems) in which propositions are established. Now it *may* happen that the validity of a proposition extends beyond the realm of the generating problem in which it is proved; the mathematician will then proceed to "extend" the realm by special methods; *but in no case can the validity of a proposition be taken for granted in the extended realm until it has been established for the extended realm*. This "method of limitation and extension," as it might be called, has proved of the greatest power in mathematics; without it the present rigor of mathematics would have been unattainable; and it is the main cause of the orderly progress in the development of mathematics which struck Kant so forcibly, the real "royal road" which he tried to find for philosophy.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Münchener Philosophische Abhandlungen. Theodor Lipps zu seinem Sechzigsten Geburtstag gewidmet von früheren Schülern.* Leipzig: Johann Ambrosius Barth. 1912. Pp. iv + 316.

The book consists of ten essays, no two of which are upon the same subject. Philosophy, logic, epistemology, ethics, and psychology are represented, and it is quite impossible to review the book as a whole. A type of mind such as that of Lipps can not help influencing greatly many pupils. This is clearly seen in some of the essays. Others of the papers have followed the doctrines of Husserl. The book will, therefore, be of special interest to those who wish to trace the range of the Lippsian influence, even if the merits of the essays did not warrant their being read. With this in mind, the reviewer decided to present a summary of all the



essays, instead of a criticism of a few important points of the best of them.

*Neukantianismus und Hegelianismus.* E. v. ASTER. This paper aims to show certain similarities that exist between the development of Kant's ideas, as found in the writings of Hegel, and as found in those of the Neo-Kantians, especially in those of P. Natorp.

After a short account of the fundamental ideas of Kant, the paper proceeds to show that Fichte and Hegel found Kant not sufficiently radical. He is inconsequent in his assumption of the "*Ding an Sich*." One must not go beyond the process of knowledge for the object of knowledge. Thought and being are identical. Thought is, therefore, a productive and not a reflective function, and the categories become ideas (*Ideen*). Furthermore, all concepts that are concerned with reality must be deduced from the concept of knowledge itself in order to be objectively valid. Kant's world is a finished system that must be analyzed into its parts. Hegel's world progresses step by step, by deduction from the first concept, that of "being," to a complete system. Kant's static system is changed to a number of connected processes. Natorp also finds that Kant assumes a something given before knowledge. The categories are deduced from the forms of judgment. What about the forms of judgment themselves? And time and space? These must be finished concepts before the synthesis of the pure experience, according to Kant's system. This criticism of Natorp's is in line with that of Hegel's. v. Aster here remarks that Kant assumes perceptions, but not "objects," to be given before the act of knowing. For Natorp, being as such becomes an ideal concept, a goal of the unfinishable process of knowing.

With Natorp as with Hegel, time and space lose their subjective characters. They and the categories must be deduced. Not from facts, but from the "*Fieri*" of thought itself, must the fundamental concepts be produced; the object of knowledge is the "one" which contains a manifold, the "one" which is identical with itself, and which contains that which differs from itself.

Natorp differs from Hegel principally in three points. First, the summit of Hegel's deduction is the absolute being. For this reason, Natorp discards Hegel's philosophy as metaphysics, that is, a seeking of the solution of the problem of knowledge outside of the identity of the method itself. Secondly, Hegel includes ethics and esthetics in his dialectic processes. Natorp makes ethical values and esthetics coordinate with scientific thought, and here he is nearer Kant. Thirdly, Hegel places history at the head of the hierarchy of the sciences. Natorp, mathematics and physics. This difference is reflected throughout the two systems, especially in the deduction of time and space. Hegel's deduction is from space to time (history being the goal); Natorp's, from time to space.

*Die Frage nach dem Grunde des sittlichen Sollens.* A. BRUNSWIG. The theme of this essay is summed up in the question, "Why must I act morally?" This may be divided into five separate questions. First, how far is the moral action the ideal action (ideal)? Secondly, what proof is

there that it is one's duty to act morally (real)? Thirdly, what practical reason is there for one to do one's duty (practical)? Fourthly, what is the ultimate cause from which this duty can be deduced? Fifthly, what ultimate purpose has moral action?

That the moral action is the ideal action is deduced from the definition, *a priori* and analytically. The answer to the second question may be summed up thus. The spur of duty to moral action is not a psychological fact, but a reality given us by experience and influencing our will. Its nature the author can not further define in this place. The paper ends here, there not being sufficient room for answers to the other questions.

*Über Wahrnehmung und Vorstellung.* TH. CONRAD. When we speak of imagination and perception, we do not view these processes separately, isolated by so-called psychological analysis, but consider them rather in relation to entire experience, and only compare the one with the other in order to discover the essential characteristics of each. The author can not agree that there is no essential, but merely a moral and relative difference, a difference of intensity, clearness, and constancy between the two. He doubts if psychology ever would confuse imagination with perception (the author is evidently unacquainted with Perky's work on this subject), and insists further that evidence of the existence of borderland experiences can not be used as an argument against specific differences.

Characteristic for the perception is that that which is perceived is *itself* before one. The tower that I perceive is there in front of me. The tower I imagine is, in a sense, before me, but is not *itself* there. Included in this negative characteristic of imagination is the positive one that the object is present. This is a seeming paradox. The statement means, however, that the object is not represented by a picture of itself, but that the object itself is active in the image. This is not the same as the presence of the object *itself* as characteristic of the perception. The image could not exist without this presence of an object. In the case of feeling, for example, although there is a relation to the object, the object is not an integral part of the feeling. In perception, the object appears as a reality independent in the sense that we can not acquire it and cause it to disappear. We can say that in the perception not only is the object there, but there is something *itself* there. On the other hand, there is not given in a perception any direct evidence of the existence of the object, although the perception differs from the imagination in that it can give information of the existence of the object, while the imagination can give neither positive nor negative data on this subject. Imagination is not coordinate with perception. It has a secondary position in that there is no specific aspect in which the object appears in imagination, but rather the object appears in imagination in a perceptual aspect. In this respect imagination is dependent upon perception, that is, the object appears in imagination in that aspect in which it would appear in a possible perception. This dependence of the imagination, namely, its representing its object in an aspect borrowed from the perception, becomes a positive independent characteristic of the imagination. The dependence of imagination

on perception is not in the sense of a real relation in time, as empirical psychology teaches. The author's deduction that the imagination represents the object in the perceptual aspect, because it is its nature thus to represent the object, is a vicious circle. The paper is a strange confusion of psychology and epistemology.

*Zur Entwicklung der Raumanschauung bei Mensch und Tier.* M. ETTLINGER. Starting from the rule that our space perception has developed through experience, but that this development is a phylogenetic and not an ontogenetic one, Ettlenger attempts to discover how far back we can trace this development in the animal kingdom. He adopts, with slight change, Hesse's six steps: first, vague perception of direction; secondly, perception of direction with distinct goal; thirdly, movement; fourthly, distance; fifthly, form; sixthly, color. In the first group, he places the earthworm, with its universal organ, that creeps out of its hole when it is dark and in again when it is light. The second step demands a specific organ of vision which admits light only from one direction. Such a function is found in the flask-shaped cells. The third step requires a number of eyes close together, so that the successive excitation may be continuous. For perception of distance we find either two eyes, one for near and one for far objects, or these two functions combined in one eye. In the latter case, different parts of the retina may be at different distances from the lens or the distance may be varied between lens and retina or, finally, the degree of refraction of the lens may change. The fifth and sixth changes require more complicated organs and functional development. Kinesthetic sensations, especially, play an important rôle.

Now Ettlenger believes that the ontological development of vision runs parallel to this. Reaction to light without perception of direction appears in new-born children. Preyer noticed a perception of direction at the eleventh day, ability to follow a moving light at the twenty-third day. Distance vision development, according to Stearns, appeared at the end of the first half-year with the help, not only of convergence and accommodation, but also of kinesthetic sensations. Then follows form perception as developed by kinesthetic sensations. From the total of these phylogenetic and ontogenetic facts, it is seen that local sign can not be reduced to fixation movements, in Lotze's sense, or to qualitative differences, as Wundt and Lipps would have it. For an explanation of local sign, we must turn both to the experiences in the development of the race and to the sensations of the individual,—those of movements of the body and head, of balance and of the other sense-organs especially concerned with localization.

*Ästhetik und Kunstwissenschaft.* A. FISCHER. This article contains many interesting observations, some of which seem hardly related to the general thesis which is as follows: An analysis of the relation of esthetics to the science of art will be most helpful in defining the concepts of these two disciplines. The science of art is engaged in the problems of the his-



tory, theory, and methods of art. As to the first problem, it is generally conceded to-day that esthetics is not the history of art. The historian asks when, why, by whom, and for what purpose. These questions do not concern esthetics. In regard to the theory of art, two questions may be asked. First, is esthetics nothing but the science of the nature, origin, cause, effect, and purpose of art? Secondly, are all questions of a complete theory of art questions of esthetics? These questions Fischer answers in the negative. One must remember that we have an esthetics of nature. Nature does not fall under the products of art. In this connection it is emphasized that esthetics is not a psychology of the feelings aroused by an object, but that it has an independent meaning and that it constantly seeks its own peculiar objectivity. This is indicated in the fact that the traditional esthetics is called modifications of the beautiful. On the other hand, the theory of art is interested in psychological, sociological, and philosophical questions, all of which are foreign to esthetics. Esthetics and theory of art agree in that they both treat of the nature of art, namely, of the nature of the beautiful. It may seem, at first glance, as if esthetics should thus be identified with the history of art, for it is assumed by some that the beautiful may be discovered through the process of induction, namely, by a comparison of all known works and a selection of the common characteristics, and in calling that beautiful which is at the present day considered a work of art. The beautiful, however, can not be defined by such methods.

Finally, as to the problem of the method of art. This is to some extent a problem of esthetics also, but not the only problem. The two concepts are thus seen to overlap, but they are not identical.

*Das Bewußtsein von Gefühlen.* M. GEIGER. Geiger's paper is concerned with the question as to whether feelings are represented in their full strength in different ways. He considers unpleasant and pleasant feelings, emotions, and the so-called sensation-feelings, experiences such as doubt, displeasure, and, finally, envy, pride, etc. He thinks that differences in theories, such as between those of Meumann and Titchener, may be overcome by careful study of the several functions involved. Characteristic of all these feelings is that they are not objects (*Gegenstände*) of consciousness. It does not follow that they may not be objects of attention. The answer to the question whether feelings can be observed, must be preceded by a description of the different functions of attention.

There are three different ways in which attention functions: first, it grasps the object as a whole; secondly, it observes the qualities of the object; thirdly, it analyzes the object in the light of these qualities.

It is only in the first manner that attention can be directed toward all feelings. In the second manner, it includes all but emotions, but no sort of feeling whatsoever can fall under attention in its third form. These three distinctions in the functioning of attention are not clear, but they suggest degrees of vividness rather than modes of functioning.

It is difficult to follow the author in his description of the different attitudes. When one observes a landscape, one may be concentrated upon the object before him or one may be lost in the mood aroused by the land-

scape. In the latter case, one's attention is directed toward the feeling, yet one does not observe the feeling (*"bin ich auf mein Gefühl eingestellt, ohne doch das Gefühl zu beachten"*). In another place we find that sorrow as feeling is distinctly different from the somber atmosphere which envelops the object. Again, he says that that which is attended to seems to be signaled out from the rest of experience by a beam of consciousness (*Bewusstseinsstrahl*).

There are three different attitudes towards feeling,—an outer concentration in which the feeling is experienced with the object and two forms of inner concentration. In the one form, one is immersed in the feeling. In the other, one recognizes his relation to the feeling, as, for example, in a certain sentimental enjoyment of a poem. It is only in reference to the first attitude that we can speak of observing a feeling. It is only here that we have the play of the beam of consciousness. In the other two we are simply conscious of the feelings being there without observing them, so that here attention plays no rôle. This concept of attention is a more restricted one than one would expect from the author after having read his extremely minute description of the different aspects of feelings. It is indeed a wonder that he, of all men, should have narrowed its sphere of activity so decidedly.

*Motive und Motivation.* A. PFÄNDER. The author in his analysis of the act of the will (will-act), which he carefully separates from that which follows the act, gives us a description of the soul, its different parts and its relation to the object, which reminds one more of a mystical philosophy than of an empirical psychology. Indeed one often feels, in reading the works of many of these pupils of Lipps's, that one has to do rather with poets than scientists. It is difficult to conceive of a soul body as distinct from a soul spirit or of a soul light which illuminates our perception. And even the strongest advocates of imageless thought will hardly follow Pfänder in his minute analysis of the will-act.

Striving is first defined, then will-act. Striving is both centrifugal,—that is, a motion from the soul center to the object—and centripetal, from the object to the soul. Besides these two relations, there is the striving *per se*, which is blind as to its goal. The will-act is always central, thus differing from this centrifugal relation of striving, and, as central, it is not only subject and origin, but also author of the act. It is not phenomenally a process caused by something from without, but a fundamental act of the ego center, nor is the will act a judgment. It is neither a positive nor a negative judgment upon being, value, or interest. The will-act is a self-determining act, subject as well as object of the act. That will differs from striving is shown by the fact that the will may be positively directed toward an object that arouses a negative striving in the ego. An example of an act of will may suffice to show the nature of this paper. A man enters a room, perceives that it is cold, and leaves the room. The cold acted centripetally upon the ego. The ego center not only attended to and apperceived the cold, but also turned to it with a spiritual attention. The judgment of the cold was recognized and appreciated. To this

was added a practical appreciation. Finally, the ego did not allow this judgment to remain without, but permitted it to enter, embodied it within itself, supported itself upon it. This supporting of the ego upon something is a peculiar spiritual act, a linking of logical cause and act, and completes the action.

*Zur Theorie des negativen Urteils.* A. REINACH. In this clear and comprehensive paper upon the negative judgment, Reinach begins with the necessity of the separation of the conviction (*Überzeugung*) from the assertion (*Behauptung*) in a judgment. There can be different degrees of conviction, that is, different degrees of certainty. On the other hand, we can not speak of degrees of assertion. No assertion is possible without a conviction, but the reverse is not necessarily true. As to the manner in which these two forms are related to the object judged, the object may be perceived or may merely be referred to. In the perception, we probably must always have imagery, but we can have imageless content accompanying the imagery such as in the perception of a book which lies on the table. "*Die Rückseite des Buches z. B. ist mir in keiner Weise anschaulich gegeben, weder nehme ich sie wahr, noch pflege ich normaler Weise aus der Erinnerung oder Phantasie anschauliche Repräsentation zu schöpfen.*" Now conviction is aroused by perception. Assertion, on the other hand, is related to the object by reference, which reference is represented by imageless content.

Reinach then turns to a description of judgment-content (*sachverhalt*) as distinguished from the object. It is the content that stands in relation to logical cause and effect, that may be possible or not, and not the object. Further, and this brings us to the main theme, we can have positive and negative content. It is the contents that stand in contradictory opposition to one another, not the objects, and it is the content that is judged and asserted. Thus, we can have negative and positive content and these contents may be merely recognized. This recognition is fundamentally different from a conviction or assertion and consequently must be separated sharply from a judgment, which is the name for the last-mentioned act.

There can be a positive conviction of a positive or negative content. This presupposes a positive self-evidence (*evidenz*). There can be a negative conviction of a positive or negative content. This presupposes a negative self-evidence. Positive self-evidence of a negative content presupposes a positive self-evidence of a positive content necessarily connected with the negative content. Finally, the negative self-evidence of a positive or negative content presupposes a positive self-evidence of an opposite positive content which, in the case of a negative self-evidence of a negative content, is in contradictory opposition.

Every assertion is dependent upon a conviction. This conviction must always be positive.

Then follows an analysis of the meaning of the word "not" which is preceded by a treatment of "and." Both "not" and "and" express functions. The function is to bring together, irrespective of the objective



possibility of such a union. It is not an apperceptive union, and only occurs in the sphere of reference, in which sphere objects are never perceived. The function of the "not" is to negate the "is," thus forming a negative content. These functions are not as such represented in consciousness during conversation, but we can at any time bring them to consciousness.

It is not the negative which is the essential of a negative judgment, but rather the assertion, and the difference between the negative and positive judgment is solely that, in the one case, the evidence is directed towards a negative, and, in the other, towards a positive content. In answer to the question whether the negative is subjective or objective, Reinach replies that positive and negative judgments depend upon contents which may be positive or negative and which may or may not exist, but when they do their existence is independent of consciousness.

*Existenz als Gegenstandsbestimmtheit.* O. SELZ. After describing the classical arguments against existence (*Dasein*) being included in the characteristics of an object, the author says that there are three determinations present in every phenomenon: first, existence; secondly, the qualitative determination (*Wiebestimmtheit*); and thirdly, the characteristic of being present (*Gegebensein*). The last determination means that the phenomenon is a state of the ego and in that sense present. Every phenomenon as such must have that characteristic. The qualitative determinations are the qualities of the object, the concept, and thus are always general. These two determinations do not, however, exhaust all of the object as presented to consciousness. In some cases, we must add its existence. It is this characteristic which is found in all individual objects and differentiates them from general objects. It is the *principium individuationis*. We can say that for this reason the Platonic idea can not exist. As to the argument that time and place are the individualizing conditions, one can answer that time and place presuppose an individual object.

Further, this existence-determination can be obtained by the process of abstraction just as the qualitative determination can. As all individual objects are existing objects, the concept of an individual object must contain the existence-determination. This existence can not be placed as coordinate with possibility and necessity, as Kant stated, for we can have a possibility or necessity of an existence. We can also say that in products of imagination such as Centaur, the existence-determination can be imagined as well as the qualitative determination. It need not be, however. In case Centaur is judged as existing, the act is directed toward the object itself as present. In the case of imagining existence, the act is merely directed towards this determination of the object. The difference, therefore, between judging and imagining existence is one of content and not of act. Finally, the existence of transcendent things is an existence in the same sense as the existence of phenomena. The manner of being, however, is different.

*Über die Bedeutung Freuds für die Psychologie.* E. VOIGTLÄNDER. The author sketches briefly the theories of Freud, but adds little to the rapidly increasing literature on the subject. She warns against losing sight of the main principles in the criticism of minor details. Voigtländer thinks that Freud neglects the inherited characteristics as an explanation of certain phenomena such as those commonly termed natural antipathies.

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*Friedrich Paulsen's philosophischer Standpunkt, insbesondere sein Verhältniss zu Fechner und Schopenhauer. Abhandlungen zur Philosophie und ihrer Geschichte.* PAUL FRITSCH. Leipzig: Quelle und Meyer. 1910. Pp. 43.

This little account of the late Friedrich Paulsen's philosophy is excellent, the very best I know. Paulsen's method, his theory of knowledge, his panpsychism and voluntarism, and his philosophy of religion in its ethical aspect are expounded with extraordinary clearness. The relations to Schopenhauer and to Fechner, especially to the latter, are brought forth admirably. Paulsen's system of philosophy—this is the impression the little booklet makes upon the reader—is typical of the general attitude of German philosophers at the end of the nineteenth century.

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## JOURNALS AND NEW BOOKS

ARCHIVES INTERNATIONALES DE NEUROLOGIE. August, 1912. *La chirurgie des aliénés* (pp. 69-89): W. BECHTEREW ET POUSSÈPE. -The operation of trephining has been performed in many cases of psychosis and has given the best results in cases of local lesions. *Les Psychoses dans l'histoire* (pp. 89-110): A. CULLERRE. Reformers, regicides, anarchists, revolutionists, represent different types of psychical disorders. *De l'Autonomie médicale dans les asiles d'aliénés* (pp. 110-116): A. M. -A project of reform in the medical administration of insane asylums. *Revue des sociétés. Analyses bibliographiques.*

Babbitt, Irving. *The Masters of French Criticism.* Boston: Houghton Mifflin Company. 1912. Pp. xii + 427. \$2.50.

Hart, Bernard. *The Psychology of Insanity.* New York: G. P. Putnam's Sons. 1912. Pp. ix + 176. \$0.40.

Hildebrandt, Kurt. *Platons Gastmahl.* Leipzig: Verlag von Felix Meiner. 1912. Pp. 128. M. 2.

Huxley, Julian S. *The Individual in the Animal Kingdom.* New York: G. P. Putnam's Sons. 1912. Pp. xi + 167. \$0.40.

## NOTES AND NEWS

"At a meeting of the Aristotelian Society on January 6, a paper was read by Professor Frank Granger on 'Intuitionist Thinking.' The return to Reid's theory that we have a direct apprehension of external objects involves the reconsideration of intuitionist thinking generally. But the theory of Reid is really to be traced back as far as Aristotle. Following Aristotle, it is convenient to consider sensible intuition before we go on to rational intuition. The union of different attributes in the perception of the object of sense may be illustrated by the analogy of the stereoscope, which combines two or more pictures into one. This analogy may also help us to understand the fusion of some of the elements of a concept. But the intuition of the real under the fixed form of the concept is impossible because the fiction of an instantaneous present is necessary for certain processes of conceptual thought. But no process of thought can be reduced to a succession of instants. Hence we must hold that an intuition of reality involves three aspects: backward looking, present, and forward looking. But these three aspects are united in one "stereoscopic" picture of events. Thus there is no need to go beyond rational intuition for our knowledge of reality as a continuous series of changes. But inasmuch as we can only apprehend a few out of all the series of events at the same time, the concept is necessary to fill out the serial order of our intuitions. In this way it is possible to combine the vividness of intuition with the comprehensiveness of a systematic view of things. Professor Dawes Hicks, Professor Brough, and Messrs. Benecke, Shelton, and Worsley spoke in the discussion, and Professor Granger replied."—*Athenæum*.

PRIVAT DOCENT KARL BORNHAUSEN has undertaken the task of establishing a library of American theology in Marburg, Prussia. The enterprise is under the care of the Prussian Ministry of Public Worship and Education which appropriates a fixed sum yearly for the running expenses. Mr. Bornhausen's aim is to make accessible in one place the most important periodicals, dealing with the American religious situation, and the standard works of American writers on theology and religion from Edwards to the present day. Particular attention will be paid at first to collecting representative works on the philosophy and psychology of religion and systematic theology. Donations of money, books, and periodicals would be of great service to Mr. Bornhausen in carrying out this important undertaking. The Smithsonian Institute will forward free of charge packages addressed to Die Theologische Amerika-Bibliothek, Lic Karl Bornhausen, Marburg in Prussia, c/o The Smithsonian Institute, Bureau of International Exchange, Washington, D. C.

DR. W. S. HUNTER, of the University of Chicago, has been appointed instructor in psychology in the University of Texas. Dr. F. A. C. Perrier, also of the University of Chicago, has been appointed to an instructorship in psychology in the University of Pittsburgh.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### THE METHOD OF INTROSPECTION

IT is a rather curious fact that after several decades of modern descriptive and explanatory psychologies, based in large measure upon the method of introspection, this method should still be the subject of controversy. The exponents of the method give to it interpretations both diverse and seemingly incompatible, whereas the hostile critic occasionally issues a blanket challenge against the method and all its works. That almost all the important results of psychology should be based upon a method which is unclear in its nature and aim is an intolerable state of affairs. The criticism of introspection is of long standing, but it seems to have accomplished little. Indiscriminate attack is likely to find itself opposed by an equally indiscriminating loyalty. What is needed, apparently, is neither vindication nor condemnation, but interpretation.

The contention of the critic that introspection distorts its subject-matter undeniably possesses a certain plausibility. When the psychologist tells us about focus and margin, and about the kinesthetic sensations, images and similar material with which he populates the outlying areas, it is reasonably evident that his results are far more than a record of what actually transpired in consciousness. The person who finds such an account illuminating shows by that very fact that he did not experience these things at all. If he had, the account would lack the charm of novelty. One is tempted to say that the psychologist tells him, not what he actually experienced, but what he ought to have experienced and what he would have experienced if he had possessed the right degree of psychological interest and training. It is the psychologist, not the layman, who in a case of fright is capable of experiencing sensations in the scalp, chest, and abdomen. The psychological account of the emotion, however valuable it may be, is not in any intelligible sense a reproduction of the original experience.

Perhaps it is unnecessary to enlarge on this point. It would seem to be reasonably clear that there is a vast difference between an experience as it occurs and the description which is given of it by

the psychologist. Just in so far as a description identifies and names what was actually in a person's consciousness when he had the experience, it is not psychological at all, but simply a common-sense account. The person unfamiliar with analysis has no name for his experience except that of "fright"; and the vagueness to which the psychologist objects is in one sense precisely the merit of the term. What he experienced was just fright, not fright in the abstract, but "this fright," which can not be further identified, as a whole or in its details, with anything else, without transforming it into something different from itself.

It may be noted, further, that the situation is not essentially different if the fright is experienced by a psychologist who, owing to the habits induced by long training, is aware, at the time that the fright is experienced, of the sensations in the scalp and the other parts of the body. An enumeration by him of these various sensations is no more psychological than the report of the layman, who can testify to nothing but fright. There is no particular virtue, psychological or otherwise, in experiencing bodily sensations. Psychology begins when we take the experience, whatever its nature, and proceed to do something with it. In the case of the layman's fright, the various sensations which are revealed as a result of our analysis are genuine discoveries, not because they may be regarded as pre-existent facts, but because they give us a clue to the bodily processes upon which the fright was dependent. But there is no theoretical reason why the psychologist should not undertake to analyze the experience which he had when he made this analysis, or his own peculiar experience of fright. These experiences likewise have their conditioning bodily processes, their obscure associative imagery, their feeling of familiarity; in brief, they have that context and setting, on the basis of which we make the distinction of focus and margin. If the demand for analysis is legitimate in the one case, it is equally legitimate in the other. That is, psychology begins properly at the point where we connect what is in consciousness with facts of which we were not conscious at the time.

According to this view, then, an experience is clear or obscure, has a focus and margin only with reference to the uses to which it may be put. That this is frequently overlooked in the discussion of introspection is probably due in part to the unfortunate etymological connotations of the term. An experience in which we subsequently discover the presence of "kinesthetic sensations" is unclear in the sense that its possible function or value as a clue to certain further facts was not experienced at the time. The analysis of "mental states" as such is as impossible as it is unmeaning. To say that the kinesthetic sensations which are present in the later experience were "marginally" present in the earlier experience is either to lapse

into mythology or to say that the substitution of the one for the other is precisely the aim of our procedure and is made in the furtherance of a certain end.

As this last statement indicates, the fundamental difficulty with introspectionism, according to its critics, is that it rests upon a false conception of experience. It pieces out the experienced with the unexperienced; it explains the known in terms of the unknown. In discriminating between focus and margin it postulates the presence of a psychical something which in some way escapes discovery until the introspecting psychologist arrives upon the scene; and it apparently disregards the fact that the experience in which the distinction of focus and margin is made is merely an experience with a more complex object, an object with its own unanalyzed margin, which does not come to light until it in turn is converted into an object by a subsequent experience. It ascribes to experience a distinction which is not an experiential fact at the moment when it is supposed to come into being, but is brought to light in subsequent reflection. To construe experience as existing, at the moment of its occurrence, in the form of focus and margin, the margin being the hunting-ground of numberless elusive entities, is to read back into it all sorts of facts which never existed until they were created by the psychologist in the course of his investigations.

It must be admitted, however, that this contention does not entirely dispose of the introspectionist, even if he maintains that his proper business is the analysis and description of "consciousness as such." While it is doubtless true that to bring anything from the "margin" into the "focus" involves some sort of change, the implication that we substitute something else in the place of the first experience is too anarchistic to be entirely plausible. It appears to ignore the testimony of the numerous experiences in which we recognize and identify experiential elements as having been obscurely present at an earlier time. The discovery of these "elements" is, as a matter of fact, very different from a mere succession of experiences, and until this circumstance is satisfactorily accounted for, the attacks upon introspection, while possibly admitting of no complete refutation, will necessarily fail to produce conviction.

It is evident, then, that in our theory of introspection there is danger of passing from one extreme view to another. Introspection is not a process of reconstituting an experience, in the sense of creating a duplicate or replica of the original event, but neither is it reducible to a bare succession of different experiences. The introspective analysis claims for its results an identity with the earlier unanalyzed experience, and this claim is of fundamental importance. To reject all identity is quite as erroneous as to insist that analysis



brings to light constituent elements, which were indeed present, but which were somehow overlooked. To formulate a consistent theory of introspection it is necessary to give to this identity due recognition and interpretation.

This identity, it may be noted, is not to be reduced to a mere succession, but neither, on the other hand, can it be construed in terms of identical elements or constituents. A succession gives us no identity, but neither does a "reconstruction" which aims to reproduce the original experience. Such a reconstruction, if successful, would obviously defeat its own purpose. If it were possible to reproduce the original experience in its entirety, we should be precisely where we were before, and the questions in which analysis has its origin would remain unanswered. The analysis changes the experience, and the change is not, as is sometimes supposed, an inevitable and deplorable incident of the process, but is its purpose or aim. To minimize or apologize for the change is not to justify introspection, but to exemplify unconscious humor. The proper test for a sound introspection is not the degree of change which it introduces, but the kind. That is, the question concerning introspection must be settled with reference to the end which introspection is to realize. If we assume that introspection has to do with a special subject-matter, *i. e.*, with a "consciousness" or with "mental states," we are bound to find in the end that introspection is merely another of the numerous delusions which are permitted for a season to trouble the minds of men. Of such a subject-matter it can not be denied that its *esse* is *percipi*, and to analyze it is—to borrow one of James's illustrations—like turning up the gas in order to see the darkness.

The fact that an advocate of introspection declares his disbelief in the existence of mental states is unfortunately no guarantee that he will not postulate them when he undertakes to explain what introspection is to accomplish. If, however, we consistently avoid the pitfall of mental states, we seem obliged to infer that introspection is a certain type of inquiry, not into the constitution or structure of non-existent entities, but into the causes or conditions of those occurrences which we call our experiences. From this standpoint the kinesthetic sensations which the psychologist discovers are significant, not as the discovery of antecedent psychological facts, but as indications of the bodily conditions upon which the earlier experience was dependent. These kinesthetic sensations, together with such facts as indirect vision and whatever else may belong to the "margin," are not obscure psychical existences—whatever that may mean—but are a name for the peculiar qualitative character of the experience whereby we are enabled to get possession of the objective factors or agencies in terms of which the experience is described.

What a given experience is like, apart from this reference to conditions, is not only beyond description, but is a matter of no possible scientific importance or interest.

The supposition that one experience may differ from another in "intrinsic" clearness, as one star differs from another in glory, results from the assumption that there is an absolute standard of what is clear and distinct—an assumption which in the last analysis leads back to the doctrine of mental states. But clearness and obscureness can be construed only with reference to some specific purpose or end. Apart from such a reference the characterization has no meaning. To say that the purpose is to know the experience "as it is" merely evades the issue. If this means to say that our purpose is to discover certain existent, but unexperienced psychical existences or qualities of psychical existences, it is more seemly to abstain from argument. A dead theory is entitled to a certain measure of respect, even if it does not know that it is dead. If, however, our purpose is something else, it necessarily has to do with something to which the present experience is related as means to end. Of these possible ends the end that is properly sought by the psychologist is but one. We are on psychological ground when the end in view is to ascertain the causes or conditions upon which a given experience is dependent. The experience may be legitimately analyzed into sensations, images, emotional tone, etc., in so far as such an analysis gives us an insight into the conditions which were operative at the time, and which determined the actual character of the experience. Or we may say that the legitimate purpose of the analysis is to furnish, not only a new experience of the situation in which the earlier experience occurred, but an experience of such a kind as to reveal the causes or conditions which were then involved, but which did not constitute a part of the experiential content. In every case we are dealing with a process of adjustment, and the "description and explanation" of the experience in question may accordingly be given partly in terms of the environment and partly in terms of the adaptive organism.

While this view is, as I believe, a defensible interpretation of what psychology seeks to accomplish, our presentation does not so far differentiate introspection from other methods employed in psychology. In the case of introspection, we have to do with a peculiar kind of identity or continuity between the earlier and the later experience. When taken in relation to its successor, the earlier experience seems to foreshadow or symbolize, so to speak, what is bodied forth in the experience which, when it arrives, is recognized as its realization or fulfilment. In other words, our psychology is based on introspection just in so far as the peculiar qualitative character of the earlier experience (*i. e.*, the "margin" or "fringe") presents

itself as the matrix of the later experience. The former experience, as we now see, had a total character which can be described only through a process of reconstruction, a character which does not lend itself to description, is not an object for knowledge, save in terms of objects as presented in a more adequate experience. The latter, however, is more adequate simply because it meets a demand or purpose. And this indicates the nature of the identity which obtains between the two experiences. It is an identity, not of "experience" in the abstract, but of things our successive experiences of which are unified or brought into relation through the end which the process subserves. "This is what I then experienced," we say; and the process is termed introspection because we are interested in the final experience, not for its own sake, or as a means to a further end, but as an explanation of the peculiarity or uniqueness of the preceding experience. We did experience the thing in question, but in that highly peculiar fashion which makes it possible to recognize and identify it when at a subsequent moment we label it and assign to it a more significant status in the realm of fact.

It is evident that our theory of introspection is but an expression of our view as to the nature of experience. According to the view here presented, the endeavor to read back the results of analysis not only explains our experiences in terms of fictitious entities, but it makes the whole process of explanation unintelligible. That any experience should lead on or pass over into another becomes utterly incredible if we permit ourselves to convert the character of process or flux itself into something else. If the unique character of the experience as a whole be first reduced to "margin," and the margin in turn be resolved into an aggregate of bodily sensations and the various etcetera of psychological ingenuity, all doubt, inquiry, and identification are at an end. They melt away into components of a wholly different nature, and instead of the "drift, occasion, and contexture" of things, which is theirs by inalienable right as objects of experience, we are left with a collection of abstractions which, in spite of psychological refinement, are as remote from actual experience as the impressions and ideas of Hume. This fact, however, is no reflection upon psychology, provided it be duly recognized, and the character and function of these abstractions be properly understood. Sensations are not experiences, but symbols. The qualitative peculiarity of our experiences is not in any legitimate or even intelligible sense a matter for investigation, except in terms of the further experiences to which it leads or the function which it performs. As we look back upon an experience we may with propriety interpret it in terms of the facts to the discovery of which it furnishes the clue, and formulate, as far as possible, the laws which govern the process



and the relationship of the various steps. But all this is subject to the proviso that the character of experience is not to be metamorphosed into something else, is not to be identified with the results which we obtain when the experiential situation becomes an object of investigation and knowledge.

The temptation to mutilate experience in this way is not, of course, peculiar to the psychologist, but has left evidences of itself along the entire line of history. The question of introspection, in its bearings on our conceptions of consciousness, truth, knowledge, objectivity, and in short all the fundamental questions of philosophy, is fully as important for philosophy as for psychology. As concerns psychology, the issue presented in this question will necessarily determine whether psychology is to revise its scale of values, shift its emphasis and direction of progress, and enter into relations of better understanding and cooperation with philosophy, or accept as its portion a distinct subject-matter and move in the direction of increased isolation from human affairs and the remaining body of scientific knowledge.

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## SOCIETIES

### THE TWELFTH ANNUAL MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

THE Twelfth Annual Meeting of the American Philosophical Association was held on December 26, 27, and 28, in New York City, where it was the guest of Columbia University and the College of the City of New York. As had been the case with the two preceding meetings, the liveliest interest centered in the debate, which this year was upon the untechnical question of "Agreement in Philosophy." The leaders of the debate were Dr. Schmidt and Professor Pitkin, who maintained the possibility of agreement, and Professors De Laguna and Kemp Smith, who supported the negative side of the question. The discussion was prolonged throughout the morning session of Friday by a large number of speakers from the floor, and in the afternoon it was recommenced with three ten-minute papers by Professor Hall, Miss Elkus, and Professor Tower, after which the open debate continued until it had to be closed *in medias res* for lack of further time.

Early in the debate it was evident that there was pretty general agreement that agreement itself was at least desirable. Three of the speakers, to be sure, emphasized the value of disagreement as well, President Thilly in particular pointing out that the improved tone of

philosophical discussion in the last twenty years was due largely to the fact that "the fundamental problems" were no longer considered settled, as they were in the prepragmatic and prerealistic days. All, of course, were agreed that the suppression of individual opinion in philosophy would be the utmost misfortune, and yet nearly all desired agreement—agreement upon the old questions, at least, if for no other purpose than that they might go on and disagree about the new ones. The desirability of agreement on our real problems is, in fact, so obvious that Professor Woodbridge characterized the very raising of the question of its obtainability as irresolute if not pessimistic. To deny the possibility of solving the problems of philosophy would, in his opinion, be equivalent to asserting that philosophy has no problems; for every real problem is there to be solved. This view was challenged by Professor Creighton, who insisted that there may be real problems which simply lead to new ones, and that it is inconceivable that we could ever get things settled in such a way that they would stay settled.

The more exact and fundamental discussion of the possibility of agreement turned upon the question whether the problems of philosophy could be isolated and attacked separately as are the problems of science. In support of the negative answer to this question Professor Kemp Smith maintained that philosophy is different in kind from science in that the latter deals only with existential problems, which may be isolated, whereas for philosophy the value aspect must always be a factor in its answers; hence no problem is for it isolable. The philosopher can not divorce any subject from its total context, hence for him nothing can be definitely settled until everything is settled. Somewhat the same view was maintained by Professor De Laguna. The only tools by which we can attack any of our problems must be themselves borrowed from other problems. But in this general form the issue was in danger, as Professor Pitkin pointed out, of being lost in the more abstract question of the nature of relations, of which it was in fact a part. This danger, he suggested, might be avoided by keeping in mind the difference between independence of existence and independence of variation. Doubtless ultimately all problems are related—and those of science no less than those of philosophy; but that is not inconsistent with a relative independence sufficient to allow of practical and temporary isolation. In fact, as Dr. Schmidt pointed out, the history of philosophy proves that isolation of problems is not only possible but actual. The development of philosophy since Plato has been by means of peeling off one special problem after another,—these developing into the special sciences. Two problems may be regarded, for practical purposes, as distinct from each other: when (1) they are not identical, and (2) neither is a special problem of the other.

The question whether the distinctively philosophical or constructive problems can be isolated from the genetic problems of the history of philosophy led the debate, during much of its course, into a side-issue, which was, however, both interesting and valuable, namely, the relation of the study of the history of philosophy to the more constructive work of the philosopher. Professor De Laguna maintained that the genetic method was so essential as a means of analysis that the problems of philosophy could not be attacked without its aid. To which Professor Perry responded that the genetic study of the subject-matter of philosophy was by no means identical with the study of the opinions of various philosophers upon this matter. The upholders of the possibility of agreement in general admitted the value of the history of philosophy as one of many resources in attacking philosophical problems, but insisted, in Dr. Schmidt's words, that the generating problem of the history of philosophy is distinct from the generating problem of constructive philosophy.

A question more relevant to the general subject was whether the history of philosophy showed real progress toward agreement or only increasing disagreement. In the opinion of Professor De Laguna the latter is the case. The progress of philosophy comes not through the solution of any of its fundamental problems, but through the substitution of a new problem—or more likely of two problems—for an old one. The process by which this is brought about is the uncovering of the latent ambiguities of the old problem; thus no real solution is reached, but a deeper mystery. Instead of solving problems we really "side-step" them. The one great problem of philosophy as such is the gaining of a greater appreciation of our own ignorance. Most of the speakers who referred to this subject, however, were more hopeful. Thus Professor Hocking pointed out that there was a great deal more latent agreement in every generation of philosophers than they themselves were aware of, and a great deal more real progress than they themselves could see. Apparent increase of divergence may be compatible with real increase of agreement on the more fundamental issues. This, in fact, as Professor Dewey showed, is the actual condition in science. Doubtless there are more disagreements in science to-day than ever before, but these disagreements are *within agreements*. They have relatively fixed and definite limits. And we have reason to hope that the same thing may be true—and may become increasingly true—of philosophy. In the main the discussion of the history of philosophy was hopeful, though perhaps it was not made sufficiently explicit that even the seeming failures of philosophy and its frequent "side-stepping" of problems were often stages of real progress toward a deeper unanimity.

Possibly the most fruitful part of the debate consisted in the



practical turn given to the discussion by Professors Perry, Lovejoy, Lord, and others. It was suggested that greater agreement of the desirable kind might be attained if the members of the Association would give up the philosopher's traditional lonely individualism, and make an effort to cooperate with each other, and especially try to understand each other and to be understood. While all were of one mind in this matter, the particular means of accomplishing the last-mentioned aim proved to be the cause of further disagreement. For the question of the value of a technical philosophical language or "slang" was at once opened, and the *pros* and *cons* well exhibited. On the whole, however, the general tone of the debate, especially as it advanced, was decidedly hopeful, and the discussion promised to be itself a useful step in the achievement of greater cooperation, if not of greater agreement.

I have dwelt thus at length upon the debate because it aroused more general interest among those present than did the papers, and also because the latter will in due time be published, whereas the debate must be preserved in the reporter's account or nowhere. The papers themselves covered, as usual, a wide field in a scattering manner. What unity they had was brought out by the careful and admirable arrangement given them. Professor Boodin's paper on "Individual and Social Minds" and Professor Singer's on "Man and Fellow Man" set going a discussion on the relation of the individual to society, from both the psychological and the epistemological aspects. Kant came in for his accustomed amount of vilification and defense, though the changing point of view concerning this idol of our fathers was rather significantly exhibited by Professor Creighton's choice of ground on which to defend him. For it transpired that Kant's "Copernican Revolution in Philosophy," though doubtless real, was on an entirely different question and of a quite different nature from what Kant himself had supposed. Hegel too had his defender in Miss Case, whose paper on "Hegel as an Observer of Thought" was a fit introduction to the general debate on agreement. Two excellent papers on social and ethical subjects were read on Friday afternoon, namely, "Jurisprudence as a Philosophical Discipline," by Professor Cohen, and "The Case System in the Study of Ethics," by Professor Cox. It is interesting to note that the two subjects which promised the warmest discussion (had time permitted) were ethics and religion. Certainly no other papers found such enthusiastic assailants as did that of Professor Cox, already referred to, and Professor Leuba's treatment of "The Relation of the Psychology of Religion to Theology." In both cases, unfortunately, lack of time prevented full consideration, but the zeal with which the short discussions were pursued and the general in-

terest manifested by all were tokens that the old-time questions of religion and ethics had not been put so completely in the shade by the newer questions of epistemology and logic as the programs of our meetings would indicate.

Two papers not directly connected with any others were those by Professor Starbuck on "Instinct, Intelligence, and Affection" and Professor Keyser on "Some Mathematical Psychologic Questions." The former of these was the only treatment of a psychological subject in the whole meeting, and was for this reason especially grateful to many of the members who would like to be both philosophers and psychologists, did not space at the Christmas season prevent. It was a pity that the lateness of the hour did not permit Professor Keyser to demonstrate fully that four-dimensional space exists in every sense of the word in which three-dimensional space may be said to exist. Such a thesis can hardly be proved within the limits of a short paper. But it may be said, at any rate, that none of those present doubted Professor Keyser's ability amply to prove his thesis if granted enough time—and enough space.

Lack of space also prevents the reporter from dealing with President Thilly's admirable address on "Romanticism and Rationalism." Without question it was one of the finest presidential addresses to which the Association has ever listened; but it must be read to be appreciated. President Butler's words of welcome and the reception given by him to the Association at his home must be passed over with a bare mention, as must also the smoker on Friday evening after President Thilly's address, and the final luncheon at the College of the City of New York. These social gatherings, as is often the case, were among the most profitable parts of the three-day meeting; but like many other good things, they can not be preserved in printer's ink.

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## THE TWENTY-FIRST ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE Twenty-First Annual Meeting of the American Psychological Association was held at Western Reserve University, Cleveland, Ohio, December 30 and 31 and January 1. Mr. Edward L. Thorndike, of Teachers College, Columbia University, presided. The attendance was large and the social features, largely due to the efforts of Mr. and Mrs. H. Austin Aikins, of Western Reserve University, added greatly to the pleasure of the meeting. Women, both as hearers and participants in the proceedings, figured more promi-

nently than at any previous meeting of the association. Eastern institutions, on the whole, were not well represented; but the institutions of the Middle West (and notably the University of Chicago) sent large and representative delegations. The exhibition and demonstration of psychological appliances were important features of the meeting, and special prominence was given to apparatus for purposes of mental tests, such as the Whipple, the Goddard, and the Healy tests. Among apparatus manufacturers who made exhibits were C. H. Stoetling, of Chicago, and Bausch & Lomb, of Rochester.

Mental tests occupied a commanding place on the program of the Cleveland meeting. Seven papers dealt with the character and results of different methods of testing children and adults. Mr. Charles Scott Berry, of the University of Michigan, gave the results of the retesting by the Binet tests of intelligence of eighty-two children. Forty-two of the subjects were school children of Ann Arbor and the rest were defectives from the Michigan school for feeble-minded and epileptic. The children were first tested in October, 1911, and retested a year later. The results showed (1) a close correlation with the results of the original tests; (2) an average gain of the normal children, who tested above age in 1911, of twenty per cent. as compared with those who tested below age, and (3) that the average gain of the defectives below the age of fifteen was fifty per cent. as compared with defectives above that age.

Mr. Henry H. Goddard, director of the research department of the New Jersey Training School, gave an account of three annual testings of normal and defective children by the Binet scale with results that indicated very slight variation beyond the development that such children would be likely to make during the year intervals. Mrs. Helen Thompson Woolley, of Cincinnati, gave a report of a series of tests administered to 800 fourteen-year-old children. Her report gave one feature of a sociological study being made on Cincinnati school children who leave school to begin work. Very generally public-school children were found superior in the tests to parochial-school children. Miss Jane Weidensall, of the State Reformatory at Bedford Hills, New York, made a report on psychological tests applied to criminal women. Slowness and variability of reaction time were marked results of the tests.

Mr. Bird T. Baldwin, of Swarthmore College, gave an account of the learning of delinquent adolescent negro and white girls as shown by a substitution test. Eye defects, enlarged tonsils, and bad teeth are common among delinquent girls. Negro girls are slower than the whites in school work, they are more irregular in progress, drop back sooner, are less neat and more inaccurate, and



their work is more influenced by moods and divided attention. Mr. William Healy, of the Chicago Juvenile Psychopathic Institute, discussed the pictorial Ebbinghaus or completion test. He called attention to the danger of snapshot diagnosis for any given individual, despite sharp correlation with general ability for a certain few tests, and he thought more good tests were needed to aid diagnosis in difficult cases. He thought the Ebbinghaus test of great value, but its use was not possible because of language difficulties. A pictorial completion test which he has devised is an open-air scene with children's various activities depicted by an illustrator for juveniles. This has been lithographed and mounted on scroll-saw wood. Ten groups or activities are represented, and from each group activity is cut a piece one inch square containing an object necessary to the group activity. It is a real completion test and analogous in many ways to the Ebbinghaus verbal method. The test has distinct worth for mental diagnosis and offers another means for observing the mind in action.

Mr. Will S. Monroe, of the State Normal School at Montclair, New Jersey, reported sex differences on six hundred young children tested in color and the Binet intelligence tests. In the color perception tests, girls of three years did 8 per cent. better than boys of the same age; they were 7 per cent. ahead of the boys at the age of four, and 4 per cent. ahead at six. But at the age of five, the boys were 2 per cent. ahead of the girls. In the tests for the names of the six standard colors, the girls were ahead of the boys at all ages. The same children were given the Binet tests for the third, fourth, fifth, and sixth years. In the third-year test the girls were ahead of the boys in four out of the five tests; at the age of four the sex differences are very slight; the boys did better than the girls in the fifth-year tests, but in the sixth year, the girls were ahead of the boys in five of the seven tests.

Miss Clara Schmitt, assistant in the department of Child Study in Chicago, gave an account of the standardization of some of the Healy tests for mental ability with 150 children in a private school. The results of five tests indicated that children's ability to deal successfully with the abstractions of representative material is developed somewhat earlier than their ability to deal in a planned way with the functional necessities of concrete material.

Experimental psychology was given prominence at the second session of the association. Miss Lillian J. Martin, of Stanford University, presented two papers. The first dealt with a quantitative investigation of the relation between the *anschaulich* and *unanschaulich* contents of consciousness. She pointed out that intro-

spectations furnish additional proof, not alone for the existence of an *anschaulich* memory, but of the fact that it actually gives rise to the visual image which is so often supposed to be that to which the memory is traceable. Miss Martin's second paper concerned the function of a visual image in memory and imagination.

Miss Mabel R. Fernald, of the Chicago Teachers' College, gave an account of the mental imagery of two blind university students, one of whom had been almost blind from birth and completely so since her seventh year, while the other has partial, though very slight, vision—a condition which has existed since her second year. The main differences in their general training are, (1) though both have to depend entirely upon touch and tactual symbols for their present reading, one learned first by visual symbols and used these slightly until her twelfth year, while the other never knew any but the tactual symbols; (2) one has had a more extensive, though crude, visual acquaintance with objects. Results of tests in verbal and non-verbal imagery show that so far as these two subjects were concerned a decided positive emphasis on tactual sensory experiences during adult life was not effective in stimulating tactual imagery for the subject who had to translate these into visual terms, while the subject who had no such resource used tactual imagery with readiness and success.

Mr. Joseph Peterson, of the University of Utah, discussed the place of stimulation in the cochlea *versus* frequency as a direct determiner of pitch. He believed that tones not due to vibrations external to the ear are probably due to periodicities arising in the liquids of the inner ear on the principle of superposition of vibrations of the primary or original vibrations. Thus all tones experienced seem to have a basis in physical vibrations arising in media exterior to the organ of Corti. Mr. Felix Krueger, of the University of Halle, followed with a paper on consonance and dissonance. Other subjects presented on the program for experimental psychology included studies in association and inhibition by Mr. John F. Shepard, of the University of Michigan, color saturation by Mr. L. R. Geissler, of the University of Georgia, and an interesting demonstration of a case in amnesia by Mr. H. Austin Aikins, of the Western Reserve University.

Seven papers were presented at the section for comparative psychology. Mr. S. Bent Russell, of St. Louis, presented a demonstration and design of an apparatus to stimulate the working of nervous discharge. He maintained that a comparatively weak nervous channel may become relatively strong if it be provided with two sensory endings, and provided outside occurrences shall cause the two end-

ings to be excited in succession from time to time. In due course the originally weak channel will prevail over the originally strong channel and will control the muscular response. Converging channels account for inhibition, and diverging channels for association of ideas. He pointed out that the importance of counter signals or nervous impulses is brought about by certain movements. He explained a form of satisfaction which is the antithesis of inhibition by the effect of counter signals upon channel development. The apparatus which he described is a hydraulic regulating system. The important parts are the transmitter, or triple slide valve with a timing attachment, a measuring or balancing device governing the hydraulic cylinder or motor, and a system of key rods connected so that each key rod controls one or more transmitters, while each transmitter is controlled by one or more key rods.

Miss Stella B. Vincent, of the University of Chicago, discussed some sensory factors in reactions to the maze. The method used was the opposite of that employed by Mr. John B. Watson, of Johns Hopkins University, in his kinesthetic and organic sensations experiments, namely, the addition instead of the subtraction stimuli. In the one group of experiments the true path and the false were made to differ so far as possible in brightness. In the other group an olfactory trail was laid alternately in the true and false pathways. The results showed a lessening of initial time and error and a decrease of total errors. On the whole, however, the final speed and accuracy was less than that found in the normal maze. The learning curves were very different. Her conclusions were that if animals are given two contrasting sensory paths side by side, the one path may prove more dominant and favor speed and accuracy in the early trials prior to any effects of learning. After the problem is learned, in the slow turning over to kinesthesia, when attention is freed, these sensory factors may still retain their potency in times of momentary distraction. The result is a less perfect automatism and a slower speed.

Mr. C. A. McPheeters, of the University of Chicago, reported on an experiment on the reactions of raccoons to a temporal series of stimuli. The animals were taught to discriminate between two series of color cards—white-blue-red and red-red-red. Controls were employed to discover if there were other factors than color influencing the reactions of animals. His conclusion is that animals do not react to colors, but to the position of the levers to which the cards are attached. Other papers presented at the section for comparative psychology were delayed reactions in animals and children, by Mr. Walter S. Hunter, of the University of Texas; brightness



vision in the English sparrow, by Miss Eupha Foley Tugman, of New York City; the relative effects of maturation and use on the development of instincts, by Mr. J. E. Shepard, of the University of Michigan, and a comparative study of the intelligence of normal and inbred white rats, by Mr. Gardner C. Basset, of Johns Hopkins University.

The general program included the following papers: "The Psychophysiological Effects of a Prolonged Fast," by Mr. Herbert Sidney Langfeld, of Harvard University; "Structure *versus* Function in Psychopathology," by Mr. E. E. Southard, of the Massachusetts Psychopathic Hospital; "Behavior as a Psychological Category," by Mr. James R. Angell, of the University of Chicago, and "Families of American Men of Science," by Mr. J. McKeen Cattell, of Columbia University.

Mr. Langfeld gave an account of a lawyer of Malta who underwent a thirty-one day fast at the Carnegie Nutrition Laboratory at Boston, the only form of nutrition being 750 c.c. of water daily. His weight at the beginning of the fast was 60.6 kg. and after the fast 47.4 kg., the drop in metabolism being about 25 per cent. Tests were made daily, beginning two days before and ending two days after the fast, at 5 P.M. The results of the tests showed: (1) slight improvement in rote memory for words; (2) in the tapping test, fall midway with recovery to initial level, and fatigue midway with initial spurt on the last few days; (3) in the strength test (the subject was left-handed) there was slight fall in the right hand, considerable fall in the left, and more frequent initial spurts with the right hand, especially during the last twenty days of the fast; (4) the tactual space threshold test (with the esthesiometer on the under side of the left forearm) showed very slight improvement; (5) there was no change in the immediate memory for digits during the thirty-one days; (6) there was slight decrease in association reaction time to twenty words; (7) in the repetition of the same twenty words, the errors throughout were negligible, with decrease in reaction time; (8) in the test of one hundred A's and fifty each of other letters, there was a decrease in time and the accuracy was high throughout the fast; (9) there was decided improvement in visual acuity, and (10) improvement in memory for ten words after 55. In general Mr. Langfeld found improvement in the higher centers involving discrimination, memory, and association as the fast advanced, but a loss in muscular reaction.

There were two joint sessions with section L (education) of the American Association for the Advancement of Science and one joint session with section H (anthropology and psychology). Among the papers given at section L were "The Need of a Dual Standard in

Testing Handwriting," by Mr. Frank N. Freeman, of the University of Chicago; "Economical Learning," by Mr. W. L. Pyle, of the University of Missouri; "Reliability of Accuracy and Speed in Practise," by Mr. H. L. Smith and Mr. M. E. Haggerty, of Indiana University; "Reliability and Distribution of Grades," by Mr. D. Starch, of the University of Wisconsin, and "Standards of Mental Efficiency," by Mr. W. L. Pyle, of the University of Missouri. Two papers were presented at the joint meeting with section H: "The Separate Origin of Magic and Religion," by Mr. J. H. Leuba, of Bryn Mawr College, and "Magical and Religious Factors in the Development of the Human Will," by Mr. Felix Krueger, of the University of Halle-Wittenberg.

As a result of his studies in economical learning, Mr. Pyle formulated the conclusion that on the whole thirty minutes proves to be the best length of time for habit-formation. In a few cases he found shorter periods slightly more advantageous, especially in the early stages of habituation. He found daily practise better than practise on alternate days, although after the acquisition of considerable skill practise on alternate days gives good returns. In his paper on "Physical Growth and School Standing" Mr. Baldwin showed that there is a positive correlation between physical development and school standing, that is, the taller children are in advance of the shorter ones in school marks and grades. He thought it of doubtful value to permit children to undertake school work in a grade in advance of their physiological age. An exhaustive study of speed and accuracy of the school children of Bloomington, Indiana, undertaken by H. L. Smith, the superintendent of the schools, and M. E. Haggerty, of Indiana University, showed very important sex differences, the boys on the whole surpassing the girls in efficiency in work in arithmetic.

The annual dinner of the American Psychological Association was held in the hall of the Chamber of Commerce Tuesday evening, December 31, at the conclusion of which President Thorndike gave his annual address on "Ideo-Motor Action." He called attention to the fact that for a generation at least the theory of ideomotor action had been one of the stock laws of orthodox psychology; and that in spite of the contrary evidence of Kirkpatrick, Woodworth, Burnett, and Thorndike, the doctrine that "an idea tends to produce the act which it represents or resembles, or is an idea of, or has as its object" is still generally held. He expressed the belief that a mental state has no dynamic potency save that its psychological parallel will evoke whatever response is bound to it or to some part of it by inherited connections, or by the law of habit. He admitted a very slight tendency for a mental state which is produced along with a

movement to reinstate the movement by reinstating that total pulse of activity; but he maintained that an idea has no power to produce an act save the power of psychological connections born in man or bred in him as the consequence of use, disuse, satisfaction, and discomfort.

As retiring vice-president of section L of the American Association, Mr. Thorndike took the subject of mental tests and measurements of correlation. He called attention to the fact that experimentation with tests and the measurements of correlation have modified greatly in recent years our notions of educational values. Goodness of memory in the sense of a uniform power to hold all that is acquired, closeness of concentration in the sense of a uniform power to resist at will distractions of every variety, and other similar general excellencies or defects are psychological myths. The measurements of correlation of the last decade have shown that types of attentiveness, imagery, intellect, or character as a whole simply do not exist, or if they do exist in a limited measure, they are so complicated by intermediate conditions as to be of no service to thought or practise. The most important accomplishment of the study of intellectual and moral diagnosis in our own day has been the establishment of principles of methods of testing educational systems. There has also been a substantial beginning in accumulating facts of symptomatology which are certain to be of use to education and the other social arts.

Mr. George Trumbull Ladd, of Yale University, took as the subject of his address as retiring vice-president of Section H of the American Association for the Advancement of Science "The Study of Man," in which he pointed out the interrelations of psychology and anthropology and their connecting cognate sciences.

In addition to the joint meeting with the American Psychological Association, section L (education) held two other sessions at which the following papers were presented: "A National University Based on National Ideas," by Mr. H. K. Brush-Brown, of Washington; "The Impossible College President," by Mr. William T. Foster, of Reed College; "The Scientific Study of the College Student," by Mr. C. W. Williams, of Oberlin College; "A Program of Educational Eugenics," by Mr. Charles W. Hargitt, of Syracuse University; "Nature *versus* Nurture in the Teaching of Arithmetic," by Mr. S. A. Courtis, of the Detroit Home and Day School, and "Physical Growth and School Standing," by Mr. Bird T. Baldwin, of Swarthmore College.

At the business session of the American Psychological Association it was decided to hold the next meeting at New Haven in connection with the American Philosophical Association. The committee on



publications reported that no progress had been made, and was dismissed at its own request. James R. Angell, Edward L. Thorndike, and James B. Watson were selected as the committee to recommend new members. Howard C. Warren, of Princeton University, was chosen president of the Association for the ensuing year. J. W. Baird, Madison Bentley, and S. I. Franz are the new members of the council, and Robert M. Ogden was selected as the representative of the Association on the council of the American Association for the Advancement of Science.

Twelve persons were elected to membership in the American Psychological Association at the Cleveland meeting, as follows: Henry Foster Adams, of the University of Michigan; Charles Macfie Campbell, of the Bloomingdale Hospital, White Plains, New York; Walter Bradford Cannon, of the Harvard Medical School; Wallace Craig, of the University of Chicago; Ludwig Reinhold Geissler, of the University of Georgia; William Healy, director of the Chicago Juvenile Psychopathic Institute; Thomas Verner Moore, of the Catholic University at Washington; Jared Sparks Moore, of the Western Reserve University; Rudolf Pintner, of the Toledo University; Albert T. Poffenberger, of Columbia University; B. R. Simpson, of the Brooklyn Training School for Teachers, and Clara Salem Town, director of the laboratory of clinical psychology in the Illinois School for Feeble-minded.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*From Religion to Philosophy: A Study in the Origins of Western Speculation.* FRANCIS MACDONALD CORNFORD. New York and London: Longmans, Green, and Company. 1912. Pp. xx + 276.

Mr. Cornford, favorably known by his suggestive book, "Thucydides Mythistoricus," here presents a study of the origins of Greek philosophy. It may be regarded as a companion piece to Miss Harrison's "Themis," to which he contributed many scattered suggestions and the chapter on the origin of the Olympic games. Like Miss Harrison and, if one may hazard a conjecture, probably under her influence, he seeks the clew to the tangled web of religion and philosophical speculation in the teachings of the French school of sociology.

Mr. Cornford strings the early Greek philosophies on two threads of tradition—the scientific and the mystical. The former leads from Anaximander through Anaximenes, Empedocles, and Anaxagoras, to Leucippus; the latter unites Heraclitus, Pythagoras, Parmenides, Empedocles, and Plato. It will be seen that Empedocles appears in both lists as com-

binning elements of both traditions; and the same must be said of other early philosophers, if one accept the principle of classification here proposed. The fundamental distinction lies in the supposed fact that the scientific tradition rests upon the basic conception of *Moira*, which signifies a spatial distribution, whereas the mystical tradition grasps the conception of *Dike*, which is a temporal process of adjustment.

The book is divided into six chapters with the following captions: I. Destiny and Law; II. The Origin of *Moira*; III. Nature, God, and Soul; IV. The Datum of Philosophy; V. The Scientific Tradition; VI. The Mystical Tradition. In chapter I. the concept of *Moira* in Greek religion is well analyzed; and the nature of Styx, the great oath of the gods, and the dispensation of Reason in Plato, are related to it. Chapter II. investigates the origin of *Moira*, and discovers it in a collective representation of a primitive social group projected into nature, because at a totemistic stage it was continuous with human society. All classification is based on tribal structure projected into nature. The four elements thus reflect the segmentation of a primary homogeneous group into a complex organization of the totemic type. Exogamy naturally exists in such an organization, and marriage of opposites (typified by the sexes), eventuating by the mediation of Eros in a *birth* of individual things, is the type of the cosmic process. Chapter III. traces the projection or extrusion from the homogeneous continuum of the social group of the three objectified entities, Nature, God, and Soul. This chapter is a summary of the French sociological view of the origin of religion, with suggestive illustrations drawn from Greek data. Chapter IV. regards philosophy as the analysis of material present in religion, and as dealing primarily with *physis*, considered as substance, Soul, divine. Chapters V. and VI. discuss somewhat in detail the fundamental doctrines of the leading philosophers of Greece down to and including Plato, relating them to the principles laid down in the earlier, essentially introductory, portions of the book.

It is hardly necessary to say that a work of this character, presenting the outstanding data of early Greek philosophy in the light of a principle not previously applied *in extenso* to their explanation, and freshly written in a clear and engaging style, is bound to be interesting reading. It is that and more; for undoubtedly our author's thesis contains more than a germ of truth, and his contribution possesses a value independent of his main contention. For all that, the present writer regards it as his duty to deprecate this style of writing. We have already had too much philosophy of history imposed on the history of philosophy. Usually it has been of a more or less avowedly metaphysical or logical turn, and it has invariably tended to vitiate the whole, especially by destroying the healthy sense of historical perspective and by drawing attention away from the living wealth of concrete detail to a few dead abstractions. The anthropological and sociological speculations are distinctly preferable to the metaphysical, if for no other reason, because their data are more numerous and more concrete, and hence fewer degrees removed from

actual thinking. But to be made serviceable they require the complement of interpretation by psychology, individual and collective, and by economic and industrial studies which shall take into account every aspect of experience and rational practise. In other words, there is no royal road to the comprehension of philosophy, religion, or anything else which is the product of man's highly complex nature and experience. Ideally the interpreter should have a complete inventory of the mental furniture of the thinker. In the case of an author this would involve the complete knowledge of his writings, of his reading, and other means of information, including the current notions and practises, of whatever kind, of his social environment. Practically of course this ideal is impossible of realization, which is to say, that except in a supposititious perfectly homogeneous group, where the comprehension must be unconscious and quasi-instinctive, and individuality does not exist, one individual can never fully comprehend another. But nevertheless the principles of science require that we approximate as nearly as possible to ideal conditions. So the interpreter of Greek philosophy should approximately exhaust the available sources for a knowledge of contemporary thought. When (and then only) this shall have been done, will it be permissible, except as a guiding principle, to have recourse to generalities derived from a condition of society practically as remote from the social environment of Plato as that of the Intichiuma is from that of the English don. Science is a conveniently elastic concept, and in her name the evolutionist has studied the primal star-dust as well as the effect of salt solutions on the ova of sea-urchins; but a practical and fruitful study of history will be vastly more concerned about proximate principles than with the reduction of the so-called elements.

To descend to particulars, Mr. Cornford's book is an interesting compound of illuminating insight, arising from the application of general principles to facts adequately defined, and of obfuscating observations and discussions due to the acceptance of alien and undigested opinions which stand ill related to the facts. A few illustrations in point will perhaps serve to make this clear. Thus when our author says that the four elements were originally conceived as spatial compartments or provinces, he is clearly in the right, no matter how or from whom he derived this insight. It is a distinct gain to have this fact related to the Greek conception of *Moira*; the gain derived from relating it to the four-fold division of the camp of a totem-group is not so obvious. Now by common consent the most distinctive contribution of Anaximander, whom Mr. Cornford regards as the ἀρχηγέτης of the scientific line of tradition based on the conception of *Moira* or spatial distribution, was held to be the concept of an ἀρχή. It is a matter of common knowledge that Aristotle and the doxographic tradition interpreted ἀρχή as element (στοιχείον); but Mr. Cornford follows modern historians in taking ἀρχή to mean "beginning," and so the most distinctive tenet of the first apostle of the scientific tradition belongs not to the dominion of *Moira*, the saint of his school, but to Dike, the tutelary divinity of the temporal order, which constitutes the mystical tradition! By the same token, Mr. Cornford



takes Anaximander's \**ἄπειρον* to be a metaphysical (!) *φύσις* or continuum, a projection of the homogenous totem-group. All this ill suits the theory and the principle of classification. The writer, however, believes that in his essay "On Anaximander,"<sup>1</sup> he has shown to the satisfaction of all candid scholars that *ἀρχή* and *ἄπειρον*, like *στοιχείον*, are to be interpreted spatially. This interpretation was reached not by the study of the totemist camp nor even by reference to the Homeric and Hesiodic *Moira*, but by a detailed investigation of the conceptions *ἀρχή* καὶ *πηγή* and *ἀρχή* καὶ *ρίζα* in pre-Socratic thought. The comparison of the political *ἀρχή* or "*provincia*" with the cosmological *ἀρχή* was considered and dismissed, not because it was not interesting or suggestive, but because no precise contact appeared to exist; such contact does exist mediately through the concept *τιμή*, but it was not pressed because of its remoteness. From the writer's review of Hirzel's "*Themis, Dike und Verwandtes*,"<sup>2</sup> Mr. Cornford might have derived some useful suggestions for the study of *Moira*, as he should have studied with care Diels's "*Elementum*."

Again, Mr. Cornford has much to say of *physis*, which he regards as the datum of philosophy and as a concept projected from the continuous homogeneous totem group. It is from this that the concepts Nature, God, and Soul arise by differentiation and objectification. *Physis*, he repeats after Burnet, is the primary substance, and the early Greek philosophers habitually referred to their "primary substance" as *φύσις*. Obviously Mr. Cornford was not acquainted with the writer's "*Περὶ Φύσεως*." A Study of the Conception of Nature among the Pre-Socratics" (1910), in which this view was controverted; nor could he be expected to know that Professor Burnet had meanwhile in a private communication to the writer virtually retracted the statements in question. One can not help wondering with what quizzical mien Professor Burnet might read the bizarre exaggeration of his own former opinion here presented. Such are the penalties of second-hand information. Our author is constantly misled by his theory into making false points, as when (p. 253, n. 1) he says: "*φύσις* in Plato means the World of Ideas," referring to the phrase *ἐν τῇ φύσει* ("Rep.," 597 A, "Phædo," 103 B, "Parm.," 132 B). As a matter of fact the phrase denotes precisely what Lucretius (*e. g.*, 1, 270) means by *in rebus*, to wit, the world of objective existence or nature, as two of the passages cited clearly show; if in the third the words apply to "the World of Ideas," it is only *per accidens*, in that the World of Ideas is regarded as the world of truly objective nature. Even a superficial study of the word *φύσις* must convince the scholar that it was only in the course of a long development that it became charged with the meanings which Mr. Cornford seems to regard it as trailing like clouds of glory from its birth.

If the treatment of *φύσις* reveals an unfortunate union of blind devotion to authority and a reckless speculation based on sociological theories,

<sup>1</sup> *Classical Philology*, Vol. VII. (1912), pp. 212 ff.

<sup>2</sup> *Amer. Journ. of Philology*, Vol. XXIX. (1908), pp. 220 ff.

Mr. Cornford's discussion of the soul is like unto it. Although he speaks of the *εἰδωλον*-soul and the *θυμός*-soul, in regard to the really crucial point, to wit, whether in a given case the thinker did use, or would have used, the word *ψυχή*, our author is consistently silent. Apparently he knows next to nothing of the development of the term and the concept; and yet it surely would be granted that until a reasonable knowledge of these fundamental matters is had, it must be idle in an historical work to say much about the subject. Nemesis follows on the heels of presumption. Mr. Cornford has made several really good points in his book, and perhaps the best is his demonstration of the fundamental consistency of Empedocles. Yet even in the moment of victory he is struck down; he is brought to his fall (p. 239 f.) by the report of Aristotle ("De Anima," 404 b, 8 ff.) that according to Empedocles the soul (*ψυχή*) contains all the elements. If one considers the passage it is obvious that Aristotle's statement is only an inference from the fact that, according to Empedocles, fire perceives fire, water, water, etc.; the same fact leads Aristotle to assert that each element was a soul (*ψυχή*). Surely, it requires little experience to suggest caution here touching the inference to be drawn from such a passage. To Aristotle, of course, perception and intellection are functions of *ψυχή*; but would Empedocles have expressed himself or even thought so? There is no case of *ψυχή* in Empedocles except in the purely religious sense; and furthermore, we have a sufficient indication of what he would have said in fr. 110, 10 Diels, where in obvious connection with the words quoted by Aristotle he says: *παντα γὰρ ἴσθι φρόνησιν ἔχειν καὶ νόματος αἶσαν*. Consequently all this had for Empedocles no obvious connection whatever with *ψυχή*, and hence there was no contradiction laboriously to explain away, as Mr. Cornford bestirs himself to do. The Empedoclean *ψυχή* is a complete analogon to his *στοιχείον*, as others before Mr. Cornford have noted.\* Apparently Mr. Cornford has been influenced by Aristotle's calling the Empedoclean elements "souls" to do likewise; they are not souls (*ψυχαί*), though analogous to souls. By parity of reasoning one might be led, as apparently Mr. Cornford was, to infer from the verse of Empedocles above quoted that all things are "soul." The urgent need of distinctions based upon careful historical study here becomes clear enough. Anaxagoras spoke of the *Νοῦς*, but so far as we know it never occurred to him to call it *Ψυχή*. The fact (if it be a fact) that Anaximander spoke of the *Ἄπειρον* as *ἀθάνατον*, and as ruling (*κυβερνᾶν*) all things, does not make it Soul (*Ψυχή*) and the fact that *Φύσις* in late Orphic hymns is personified and receives worship does not show that *physis* is Soul.

Mr. Cornford's study of the "mystical" tradition is much better than the "scientific," probably because the factors to be correlated are more clearly defined and the analogies more obvious; but here too he regards the relation between the philosophical doctrines and the "religious" beliefs as too immediate. That they are related is so obvious that even

\* See the writer's "Die Bekehrung im klassischen Altertum," etc., *Zeitschrift für Religionspsychologie*, Bd. III., Heft 11 (1910), p. 4, n. 14.

the ordinary perfunctory student of the history of thought has not been able entirely to overlook the fact; to place primitive beliefs into *immediate* juxtaposition with the Platonic ideas is, however, only to ignore or to confess one's ignorance of the infinitely complex structure of civilized society and thought that intervened and wrought itself into manifold conventions of a substantive or normative character. By the time philosophy arose the complexion and specific contents of the normative forms had largely changed; not the primitive concepts germane to a world conceived in terms of magic, but a highly complex and sophisticated set of notions defined in relation to the arts and crafts of civilized society furnish the raw material or the proximate principles for the construction of a synthesis or serve as the *corpus vile* for analysis. Some of these concepts the writer has sought to trace in his "Antecedents of Greek Corpuscular Theories."<sup>4</sup> If Mr. Cornford will consider some of the matters there discussed, he will see that, *e. g.*, the influence of the doctrine of metempsychosis on that of the atomic structure of matter is far less direct than he appears to assume. Both are related to the conception of *semina certa*, which has countless ramifications and developments. One of the latter, to wit, Aristotle's principle of causation by the *δμῶννημον*, might furnish the text for a long discourse, as it sums up the whole body of common practise and discloses at the same time its own roots in the rites of sympathetic magic. But when the concrete historical setting is thus reconstructed it becomes clear that the distinction between the "scientific" and the "mystical" tradition fades into relative insignificance, having for its sole, but sufficient, basis the acknowledged fact that a group of Greek philosophers were historically in intimate relation to mystical sects and that, as one should expect of honest, energetic thinkers, their thought in the spheres of religion and philosophy reveals the operation of the same or similar normative concepts. That these similar concepts had ultimately the same or a kindred origin is almost a matter of course; the question for the historical student to raise and, if possible, to answer, is whether and to what extent the individual philosopher may have been conscious of their ultimate identity. The uncertainties that cluster round the philosophy of the Ionians and the difficulty of immediately correlating their scientific concepts with those of religion are obviously related to the curious phenomena of the divorce of Homeric theology from the religion of the common Greek, especially in Greece proper. We shall require much study of matters of detail, rather than more sociological speculation, before we can hope to offer a satisfactory solution of these vexed questions.

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*The Oriental Religions in Roman Paganism.* FRANZ CUMONT. With an Introductory Essay by Grant Showerman. Chicago: The Open Court Publishing Company. 1911. Pp. xxv + 298.

This is a book to command attention. Since the publication of his <sup>4</sup>*Harvard Studies in Classical Philology*, Vol. XXII. (1911), pp. 111 ff.



"Monuments de Mithra," begun in 1894, Professor Cumont has consistently maintained his leading place among all students of this subject. And in no other field of history has there been more rapid and fruitful progress. Hardly more than a dozen years ago almost nothing existed concerning the great syncretistic movements of religion in the Roman empire. Paganism was viewed generally athwart either the prejudices of the Christian fathers or the sympathies of the humanists. No real understanding was possible until archeology supplied history with the sources and anthropology with the key to their meaning. The scholarship of the twentieth century is now using these, if not to reconstruct the ancient world, at least to reconstruct the construction of it in vogue but a dozen years ago. And in no field is this new humanism accomplishing more important results than in the history of those obscure movements which carried along the mysteries and cults of the Orient into the heart of the Roman world. Of about 350 titles referred to in the notes appended to this volume, at least 300 are to works or articles written since Cumont himself published the first volume of his "*Monuments de Mithra*," and almost 290 refer to publications of the twentieth century. This furnishes a remarkable indication of the newness of the subject on the one hand and of the vast cooperative effort now directed upon it. It also indicates the value of such a survey as this, which opens the clogged perspective so that any one may see it, and depicts the elusive phenomena with sure and masterly hand. For Cumont is an historian of the higher type. He does not merely present a series of problems solved, or posed, but fits the results of scholarship into the general scheme of the social, intellectual, and religious history of antiquity. If this clarification was partly due to the fact that the matter in this volume was first given as lectures, let others who deal with such subjects give lectures, too.

There are eight chapters treating of the foreign religions, first in their own home and then in their migration and acceptance in the west. The opening chapter on "*Rome and the Orient*" is especially striking, for it involves a refutation of that popular fallacy in our text-books that the Orient was to Rome what the "effete East" is to us. Cumont rapidly points out, from ready, though ignored, evidence, how science, art, philosophy, law, industry, civilization, in short, came to Rome from the east, and how these cults of the great "religion of salvation" came as a part of that larger heritage. His keen appreciation of the quite medieval inadequacy of our sources for ancient history is cogently expressed, but he remedies the defect so far as he can by going to Persia, Syria, Asia Minor, and Egypt rather than to classical authors. Archeology has already yielded us enough so that we may get a truer idea to-day of these wandering cults than cultivated pagans were satisfied with in ancient Rome. Yet there is one disadvantage in the progress of knowledge; it makes all syntheses premature. Even since this book has appeared, Breasted has largely recast our views of Egyptian religion. But this is merely what is happening everywhere in history. All the historian can do is to reproduce the only past that exists for him, that which exists in his present. This Cumont has done, thoroughly, sanely, and with the gift of style.

The notes and bibliographical apparatus, which are appended separate from the text, furnish in themselves a remarkably full and helpful guide to the literature on all questions treated in the body of the book. Needless to say, they are carefully selected and are as up to date as the text itself. There is an index.

COLUMBIA UNIVERSITY.

J. T. SHOTWELL.

*The Normal Child and Primary Education.* ARNOLD L. GESELL and BEATRICE CHANDLER GESELL. New York: Ginn and Company, 1912. Pp. 340.

Too little is known of the characteristics and powers of the normal child and of the best methods of developing them. Especially is this true of the primary child, hence he is "far below his possibilities, and is ripe for unguessed avenues of activity and attainment." Just fresh from the home or the kindergarten, with many traits akin to the adolescent, he is often subjected to the same rigidity of rule and inflexibility of program that characterize the upper grammar grades. The subject-matter of most importance for him is still, in the minds of many teachers, the three R's. In contrast to this point of view the authors of this book hold up to us the primary child as a little animal, governed largely by instinct and possessing such habits as have resulted in pleasure. Full of life, full of activity—demanding, questioning, investigating—with desire and action as the keynotes of his conduct.

The book is written in four parts: Part I. is an historical introduction, tracing the development of the present point of view in education; Part II. deals with the genetic background of the child, stressing instincts; Part III. treats of the pedagogy of the various primary-school subjects; Part IV. offers some brief suggestions as to the conservation of child life. In the opinion of the reviewer much of Parts I. and II. could be easily dispensed with, for although the topics treated form the scientific basis for the method suggested, as presented, they are too technical and too loosely connected with the rest of the book to be of much value to teachers. Part III., however, is very suggestive, rich in concrete material, and alive with a very real interest in children. In it the authors take the various primary-school subjects and by suggestion and criticism show how they may satisfy the needs of the developing child and also lead to future social efficiency. Although the treatment of some of the topics is plausibly idealistic, any teacher who reads Part III. of this book will not only gain definite suggestions for work with school-room subjects, but will be inspired with a truer appreciation of the active, lovable child nature with which she has to deal.

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## JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. August, 1912. *L'Univocité scotiste* (second article) (pp. 113-127): S. BELMONT.—The concept *univocité* as

developed by Duns Scotus is of theoretical importance and also of great practical value. It makes possible our escape from agnosticism. *Nérvose et Mysticisme. Sainte Térése relève-t-elle de la pathologie?* (second article) (pp. 128-154): A. HUC. — An examination of the Saint's powers of memory, imagination, introspection, and judgment, and of her intellectual activity and personality shows her to have been normal or better than normal in them all. Her will power as little as her intellectual faculties can be classed as pathological. She carried out a great reformatory enterprise against tremendous obstacles. *Théorie des Emotions* (pp. 155-178): E. PEILLAUDE. — Emotions are reactions which by encouraging or retarding actions aid in the bodily and spiritual struggle for existence. While no emotion is without expression, James is unfortunate in viewing the relation as a causal one with expression as the prior element. *La nouvelle organisation de l'enseignement philosophique à l'Institut catholique de Paris. Sujets de dissertations philosophiques proposés aux examens du baccalauréat (juillet 1912). Analyses et Comptes rendus.* J. LUBAC, *La valeur du spiritualisme*: J. MARITAIN. R. MÜLLER-FREIENFELS, *Psychologie der Kunst*: R. JEAUNIÈRE. R. P. SCHWALM, *Leçons de Philosophie sociale, Tome II. Le Patronat et les Associations.—La Société politique*; W. NERNST, *Traité de Chimie générale*: J. BULLIOT. P. SOLLIER, *Moral et Moralité*; R. EUCKEN, *Le sens et la valeur de la vie, Können wir noch christen sein?*; Th. FLOURNOY, *La Philosophie de William James*; S. GAGNEBIN, *La Philosophie de l'Intuition. Essai sur les idées de M. Edouard Le Roy. Notes Bibliographique. Recension des Revues et Chronique.*

REVUE PHILOSOPHIQUE. August, 1912. *L'idéalisme des valeurs et la doctrine de Spir* (pp. 113-139): J. SEGOND. — A constructive criticism of Spir's vigorous dualism of the real and the illusory. *Les conditions biologiques de la timidité* (pp. 140-160): L. DUPUIS. — The description, etiology, and effect of the crisis on consciousness in the case of timidity are adequately set forth in M. Hartenburg's "Les timides et la timidité." The present article is devoted to the pathogenesis of the crisis. *La réalité sociale* (pp. 161-171): W. M. KOZŁOWSKI. — Social reality has its basis in the social bond of psychic nature which is realized in individual consciousness, but which surpasses them by its content and its duration. *Variétés. L'œuvre philosophique de V. Brochard*: L. ROBIN. *Analyses et comptes rendus.* H. BERR, *La synthèse en histoire*: DR. S. JANKÉLÉVITCH. *Turro, Ursprung der Erkenntnis*: J. DAGNAN-BOUVERET. S. GAGNEBIN, *La philosophie de l'intuition*: A. JOUSSAIN. W. VOGEL, *La religion de l'évolutionisme*: A. JOUSSAIN. V. LEE and C. A. THOMSON, *Beauty and Ugliness*: L. ARRÉAT. *Notices bibliographiques. Revue des périodiques.*

Todd, John Welhoff. *Reaction to Multiple Stimuli.* Archives of Psychology, Number 25. New York: The Science Press. 1912. Pp. iii + 65.

Vincent, Stella B. *The Function of the Vibrissæ in the Behavior of the White Rat.* Behavior Monographs. Vol. I., No. 5. New York: Henry Holt and Company. Pp. 81.



Watson, John. *The Interpretation of Religious Experience*. The Gifford Lectures for 1910-1912. 2 Vols. Glasgow: James Maclehose and Sons. New York: The Macmillan Company. 1912. Pp. xiv + 375 and x + 342. \$6.00.

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## NOTES AND NEWS

THE New York Branch of the American Psychological Association will hold its next meeting, in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences, on Monday, February 24. The following papers will be read: "Psychology As the Behaviorist Views It," Professor John B. Watson, of Johns Hopkins University, non-resident lecturer in Columbia University; "Illusions and Hallucinations in Insanity," Mr. D. O. Lyon; "A Note on the Retention of Practise," Dr. F. Lyman Wells; "Painting and the Learning Process," Mr. C. M. Sax; (1) "Methods of Orientation and Imaginary Maps" and (2) "The Probable Explanation of Certain Flock Formations of Birds," Professor C. C. Trowbridge.

At the last meeting of the New York Branch on January 27, the following papers were read: "The Natural Sciences as the Basis of the Social Sciences," Professor A. G. Keller; "Paleolithic Environment in Europe," Professor George Grant MacCurdy; "Race Characteristics vs. Natural Environment in Commercial Success," Professor Bishop; "Climatic Influences in Human Activity," Professor Ellsworth Huntington; "Culture and Environment," Dr. Clark Wissler; "The Physiographic Environment of the Machiganga Indians of Peru," Professor Isaiah Bowman.

PROFESSOR EDWARD L. THORNDIKE, of Teachers College, Columbia University, will give the psychology lectures on the Ichabod Spencer Lecture Foundation at Union College in February and March of this year. The general subject of the lectures will be "The Springs of Conduct," and the special topics will include "Human Instincts: A General View," "The Social Instincts," "The Original Roots of Wants, Interests, and Motives," and "The Value and Use of Human Instincts."

PROFESSOR J. MARK BALDWIN has returned from the South, where he lectured in the University of South Carolina and the Columbia College for women. He sailed on February 1 for Paris to lecture for the Comité France-Amérique on "French and American Ideals."

HENRI BERGSON, professor of philosophy in the University of Paris and visiting French professor at Columbia University for the year 1912-13, delivered his first lecture at Columbia University on February 3.

PROFESSOR JAMES HAYDEN TUFTS, head of the department of philosophy in the University of Chicago, has been made chairman of the Illinois Committee on Social Legislation.

PROFESSOR WILLIAM P. MONTAGUE, of Columbia University, who was away on leave of absence during the first half year, returned from Europe on February 3.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD<sup>C</sup>

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### PHILOSOPHY AND OUR LEGAL SITUATION<sup>1</sup>

THE difficulties inherent in our American legal system are in some important respects more deep reaching than many of us are aware. To a number of us the cause of maladministration of justice is personal; it is due, we think, to poor judges, to ignorant or biased or pettifogging or corrupt judges. To some of us, the remedy lies in the impeachment, to others, in the recall by popular vote of these unfaithful or ill-trained public servants. Doubtless both the cause and the cure are to an extent true. Individual judges in many cases do not prove to be all that we may rightly expect them to be, either in intelligence or in integrity; and in view of this the large measure of irresponsibility which they enjoy—which is sometimes euphemistically expressed as their “judicial independence”—is unquestionably a menace to the public welfare. No doubt therefore any steps which will properly induce in our judicial servants a deeper and more real sense of their public responsibility must be of social advantage. But there are difficulties that lie still deeper. For they remain even when we have good judges, learned, unbiased, and honest judges. To others, the evil lies in the over-great complication of our legal procedure, and the remedy in simplification. Again, no doubt, both cause and cure are to an extent true. But even should such simplification of the processes of law be accomplished, it is a question whether it would relieve us of the gravest of the distresses from which we now suffer. For there are difficulties in our legal system that penetrate as deeply as the fundamental principles of our political and social life. They reach down even deeper than the much berated constitution, for the constitution itself is, in many respects, but the instrument of these same fundamental principles.

The chief and captain of the difficulties lies in a certain philosophy which for two centuries at least has played important part in our common law and which has been adopted by Americans as pe-

<sup>1</sup> The major portion of this paper was read at a meeting of the New York Alumni Chapter of the Phi Beta Kappa Society, May 31, 1912.

cularly expressive of their social and political thought. This may indeed seem strange, that a philosophy should be the cause of our ills, for to most of us, doubtless, philosophies are of the insubstantial stuff that dreams are made of and have little bearing upon our practical life. But the fact remains that in this case not only is this certain philosophy determinant of many of our judicial decisions, but it is determinant in so widely disastrous a manner that it is rousing well-nigh a whole people to indignant protest. It must call forth in the philosopher some quiet pride, though of a mixed character, no doubt, to realize this fact. For if a false or inadequate philosophy can work so much of evil, how much of good, he may rightly ask himself, might not a true philosophy accomplish! Nor need he take to himself blame for the evil effects. For the philosophy which is thus the cause of so great difficulty in the administration of justice is one which he, with most of his fellows of the social sciences, has long since abandoned. Only the law (may we not say it), unwitting in its scientific isolation, laggard in the swift race of research, still worships devotedly at the otherwise abandoned shrine.

Since I am unfortunately only a philosopher and not a jurist, it is of this philosophy that I wish to speak, to the end of making clear, if I am able, its peculiar inadequacy and the need for its effective modification.

## I

The English common law, in which this philosophy has prominent part, for many centuries served the high purpose of defending liberty against despotic oppression. Its principle of "the supremacy of the law" was construed for the sake of guarding individual rights against the arbitrary will of other individuals or powers. It had its strong development in centuries when, by reason of the aristocratic and theocratic<sup>2</sup> organization of society, the oppression of the individual was relatively easy—the oppression of him bodily, or through his property, or family affections, or religious convictions. In such an age, the defense of the individual had to be secured by law expressing unequivocally and emphatically the sacredness of certain individual rights. Thomas More gave expression to this in the revolutionary principle that in an ideal state all individuals must be equal before the law.

But it was increasingly realized by the social philosophers of these centuries that opposition to the two strongly intrenched classes—the clergy and the nobility—to be successful, must be founded upon

<sup>2</sup> "Relatively to lay society, the clerical order was a separate, and, in a sense, a superior caste—a spiritual aristocracy." Ritchie, "Natural Rights," page 254.



wholly unassailable principles. Those rights of the common man which the law was seeking to defend must be shown to be grounded not in anything as capricious and open to doubt as the will of legislators, but in the very nature of reality itself. For the privileged classes might easily retort that it was not in fact socially expedient to regard all men as equal before the law. Aristotle, for example, had reasoned that certain persons were naturally slaves; a society organized according to a graduated system of special hereditary privileges would, according to him, offer far more promise of a brilliant development than one in which the highest in birth and accomplishment was regarded, legally, as of no greater worth than the lowest. Thus, to the social philosophers intent upon undermining the system of class privilege there was apparently but one course to pursue: to prove that the equality of all men, their possession of certain unassailable rights irrespective of class or station, was grounded in nature itself. So, to the end of defending the common man and of abrogating special privileges and immunities, the philosophical theory of natural rights was slowly wrought into shape. This is the theory which is still the basis of our American legal and constitutional systems.

It will be unnecessary here to enter into a detailed history of the development of this momentous social theory. It will suffice to recall its main points: (1) that all men are born free and politically equal; and that it is their natural right therefore to remain thus free and equal; (2) that since men are by natural right equal, no one can have any right to encroach on another's equal right, among these rights being those of life, liberty, property, and the pursuit of happiness; (3) that political rights are based upon contract.

The first two principles are sufficiently familiar. The third, which is their logical outcome and which has brought in its train most of the difficulties since encountered, is not so familiar. According to the theory of equal birth and equal right, the individual is the primordial unit. All institutions, organizations, societies are secondary to him, have their growth out of him. The state therefore is but the product of individual wills; the individual is in no sense the product of the state. The state exists to serve these primordial wills; it must in nowise encroach upon them save as they have themselves, for their own advantage, consented to such encroachment. Whatever powers therefore the state possesses are powers granted to it by individuals. The state, in short, is wholly the result of the mutual consent or contract of individuals to enter into community of life. From this point of view the state is, as it were, a necessary evil. It is simply the surrendered residuum of individual rights and privileges.

It follows from this view that the power and authority of the

state are to be jealously restricted. The prime concern of men is the preservation of the rights and privileges of each individual. We find a vivid expression of this individualism in a typical passage from Blackstone: "So great moreover is the regard of law for private property, that it will not authorize the least violation of it; no not even for the general good of the whole community. If a new road, for instance, were to be made through the grounds of a private person, it might perhaps be extensively beneficial to the public, but the law permits no man, or set of men, to do this without the consent of the owner of the land. In vain it may be urged that the good of the individual ought to yield to that of the community, for it would be dangerous to allow any private man, or even any public tribunal, to be the judge of this common good, or to decide whether it is expedient or no. Besides, the public good is in nothing more essentially interested than in the protection of every individual's private rights."<sup>3</sup>

In the light of historical conditions, it is not difficult to explain such a view, so jealously careful of individual rights, so suspicious of governmental encroachment. The explanation will be found to have important bearing upon our own peculiar attitude toward governmental interference with the rights of individuals. "The eighteenth-century conception of liberty," writes Professor J. Allen Smith, "was the outgrowth of the political conditions of that time. Government was largely in the hands of a ruling class who were able to further their own interest at the expense of the many who were unrepresented. It was but natural under these circumstances that the people should seek to limit the exercise of political authority, since every check imposed upon the government lessened the dangers of class rule." There was every reason, then, why the common man should be suspicious of government, and why the English common law, developed in large measure to protect him, should lay stress upon his individual right against the relatively irresponsible power of the ruling classes.

It was in this thought of individual freedom from governmental control that our American nation was born. There was the memory of aristocratic oppression, political and clerical, and the thought of government as the ready instrument of such oppression. To secure liberty, then, meant to secure the individual against political domination. Government was indeed a necessity even for freemen; but the less one had of it the better. This accounts largely for the extreme care with which the founders of our nation guarded themselves against political encroachment, hedged the state about with all manner of restrictions, and surrounded their individual rights and liber-

<sup>3</sup> Blackstone, "Commentaries" (Wendell), page 138.

<sup>4</sup> J. Allen Smith, "The Spirit of American Government," page 291.

ties with secure protective devices. Government was to be feared; for had it not always been the source and instrument of privileged oppression?

Yet, curiously enough, in the brief period of our national existence, the situation has become almost exactly reversed. In the eighteenth century the political order was oligarchic, while the economic order was democratic—small producers and manufacturers, an easy transition from employee to employer, wealth very widely distributed, economic opportunities relatively equal. The hope of the members of that democratic economic order was to be let alone by the oligarchic governmental order. *Laissez faire* was the solvent word. In the nineteenth and twentieth centuries, on the contrary, the conditions have been exactly reversed. The economic order is now the conspicuously oligarchic order: through the introduction of complex machinery and the concentration of industries, the small producers and manufacturers have been swept largely into the class of hired workers; a wide gulf yawns between employers and employees; the employee may no longer easily become an employer; wealth is concentrated in the hands of a few; economic opportunities are exceedingly unequal. The industrial revolution, in short, “has resulted in the transfer of industrial power from the many to the few, who now exercise in all matters relating to production an authority as absolute and irresponsible as that which the ruling classes exercised in the middle of the eighteenth century over the state itself.”<sup>5</sup> As against this development of oligarchic organization in the economic order, there is, on the contrary, in the political order increasing realization of democratic equality. Thus the “class” which is now a danger to the liberty of the common man is no longer, as in the former century, the *political* ruling class, for in our political democracy we have no class with special political privileges. The class which is now the chief source of both actual and potential danger to liberty is the *economically* regnant class. I need not dwell upon this. There will be no question, I think, that the chief threat to our democratic institutions to-day is not our legislative bodies, but the vast economic powers which tend more and more to override our legislatures, to defy our common will, to suppress the sovereign rule of the people by the more powerful sovereignty of economic compulsion. More and more the political state, once supreme, tends to become but a lesser state within a state. The fight for democracy, in short, is now an economic, not a political, fight. That, I take it, is the essential significance, *e. g.*, of the socialistic movement.

<sup>5</sup> *Ibid.*, page 307.



## II

And now we may perhaps realize the curious contradiction in which, as a nation, we find ourselves to-day. The theory of natural rights, fashioned in the years when the state was the natural foe and the economic order was the refuge of the common man, is still our national theory in the day when, on the contrary, the state is the refuge and the economic order is in many respects the chiefest foe of the common man. In the earlier century the cry of "hands off of business" was the slogan of individual liberty; in the nineteenth and twentieth centuries it is the slogan of economic concentration and oppression. It is not surprising then that a theory embodied in the common law and stated expressly in the constitution, which once served for the protection of the common man has become increasingly the instrument of his oppression. As a distinguished jurist has recently expressed it, "To-day for the first time the common law finds itself arrayed against the people; for the first time, instead of securing for them what they most prize, they know it chiefly as something that continually stands between them and what they desire. . . . There is a feeling that [the common law] prevents everything and does nothing. . . . It exhibits too great a respect for the individual and for the intrenched position in which our legal and political history has put him, and too little respect for the needs of society, when they come in conflict with the individual, to be in touch with the present age."<sup>6</sup>

This reversal of the situation may be aptly illustrated by reference to recent decisions of our high courts of appeal. To take a famous instance, a law is passed prohibiting the manufacturing of cigars in the home. It is obviously a law framed in view, not only of social welfare, but of the welfare of those whom it prohibits from sweatshop work. Yet a high court of appeal pronounces the law unconstitutional. Its reason for so doing is that such a law restricts the workman in his liberty of choice as to the place and manner in which he is to earn a livelihood. "Liberty in its broad sense as understood in this country," says Justice Earl in his decision in this case, "means the right not only of freedom from actual servitude, imprisonment, or restraint, but the right of one to use his faculties in all lawful ways, to live and work where he will, to earn his livelihood in any lawful calling, and to pursue any lawful trade or avocation. All laws, therefore, which impair or trammel these rights (except as such laws may be passed in the exercise by the legislature of the police powers . . .), are infringements upon his fundamental rights of liberty, which are under constitutional protection."

<sup>6</sup>R. Pound, "Do We Need a Philosophy of Law?" *Col. Law Rev.*, Vol. V., page 344, May, 1905.

It is true, indeed, that by such a decision of the court, the individual's liberty is protected against the encroachment of the state. But in this case the real enemy is not the state, but exploiting manufacturers. Thus the court, in protecting the worker against his apparent enemy, actually delivers him bound hand and foot to his real foe, the sweatshop manufacturer, and this in the sacred name of protection to the worker's fundamental rights.

Again an act is passed by a legislative body prohibiting the payment of workmen in anything except money. Speaking of these sections of the act, the court said:<sup>7</sup> "They are wholly unconstitutional and void, inasmuch as by them an attempt has been made by the legislature to do what in this country can not be done; that is, prevent persons who are *sui juris* from making their own contracts. The act is an infringement alike of the right of the employer and the employee. He may sell his labor for what he thinks best, whether money or goods, just as his employer may sell his iron and coal, and any and every law that proposes to prevent him from so doing is an infringement of his constitutional privileges and is consequently vicious and void."

Here again the court is ostensibly defending the right of the individual laborer, placing him as a free individual with "rights" on a par with his employer. But who that knows the viciousness of the widespread system of payment in company orders or in truck store goods or in forms of vague promises, and who that knows the weakness of the individual laborer to protest against such payment, does not realize that such ostensible court protection exposes the worker but the more fatally to the oppression of unscrupulous employers.

Again an act is passed restricting the number of hours of work per day to eight. (*Ex parte* Kubach, 85 Col. 274.) The court pronounces this null and void, supporting its decision as follows: "We can not conceive of any theory upon which a city could be justified in making it a misdemeanor for one of its citizens to contract with another for services to be rendered because the contract is that he shall work for more than a limited number of hours." Again the discussion is in a wholly individualistic spirit. There is no thought that the permission given to each individual to contract as he pleases as to number of hours is really a power given to employing agencies to compel as long hours of labor as they possibly can. Again in this case it is the legislature that seeks to protect the common man, while it is the court that, protesting against legislative interference with his individual "rights," in fact exposes the man to the exploitation

<sup>7</sup> Godcharles and Wigeman, 113 Pa. St., 431.

of employers. The court, curiously enough, thus makes it necessary for the worker, if he would defend himself against exploitation, to do so by extra-legal methods of trade union pressure. And yet when such pressure is brought to bear, the court is the first to issue the summary injunction.

Again an act is passed requiring that wages due be paid on the day of discharge. The court pronounces this act null and void; and in so doing declares with eloquent indignation:<sup>8</sup> "The patrimony of the poor man lies in the strength and dexterity of his own hands; and to hinder him from employing these in what manner he may think proper, without injury to his neighbors, is a plain violation of this most sacred property." Therefore, says the court in effect, the poor man must never be deprived of the inestimable privilege of agreeing with his employer to wait patiently six months or even a year or a dozen years for the money justly due him at the time of his discharge. *Summa jus summa injuria!*

One might easily multiply instances, but the foregoing are typical of scores of decisions.

In all of these cases the object of the court is perfectly clear and the procedure perfectly legal: to protect the individual in his right freely to contract, to prevent any encroachment upon this fundamental right of his on the part of the state. This protection is granted on the theory that the individual has a natural right to the ownership and disposal of his private property—his property in things or in his labor. But the thought, as we have seen, is wholly absent from these decisions that the real encroacher is not the state, but the economic powers against which the state directs its legislation. "I do not criticize these decisions," says Professor Pound, after detailing a score or more of them. "As the law stands, I do not doubt they were rightly determined. But they serve to show that the right of the individual to contract as he pleases is upheld by our legal system at the expense of the right of society to stand between our laboring population and oppression. This right of the individual and this exaggerated respect for his right are common-law doctrines. And this means that a struggle is in progress between society and the common law." Again, it is a sheer reversal of the older situation.

### III

It is in this conception of the individual's natural right to the unrestricted ownership, use, and disposal of his property, to his freedom therein from state control, that the crux of our present American difficulty lies. It is in this conception, too, that the theory of "nat-

<sup>8</sup> *Leep v. St. Louis I. M. & S. R. Co.* (1894); 58 Ark. 407.



ural rights''<sup>9</sup> comes into direct conflict with its own more essential principles. For among the other "natural rights" assumed, by the theory, to be possessed by men are the rights to life, liberty, and the pursuit of happiness. We have just seen how the strict carrying out of the principle of the inviolability of private property (*i. e.*, in the right freely to contract) comes into tragic conflict with the industrial liberty of workers, with their pursuit of happiness, and, too often, with their life itself. In the earlier centuries, as we have seen, such a conflict could hardly occur, by reason of the relative equality of men in the economic order. But the conflict was simply dormant. Logically it was present all the while; and it required simply a change of economic conditions to bring it glaringly into relief.

The significance therefore of our present American situation is that, owing to important changes of economic conditions, it shows forth as never before the fundamental self-contradiction hitherto lurking in the theory of natural rights. The tragedy of the situation lies in the fact that, because the American constitution which embodies that self-contradictory theory is practically unchangeable, and because the courts are sworn to the service of that constitution, our American life must subject itself to the curious and really unprecedented indignity of ruling itself by laws and principles patently self-contradictory. For an age of reason such a situation is indeed the speaking image of unreason itself!

#### IV

What then of the remedy? Obviously, it must lie in such modification of the philosophy which is at the foundation of our legal system as will eliminate the patent self-contradictions. How is such modification to be accomplished? Let us regard in this connection two remedies widely proposed as a cure for our legal and political difficulties: the recall of judges and the recall of decisions. Will these remedies really cure the evils? That they would cure some evils, one may easily believe, although one may easily be certain, too, that one of them at least will bring distempers greater than the evils cured.

Would the recall of judges solve our difficulties? The recall of

<sup>9</sup> Lest the reader should misapprehend the main point of the article, let me hasten to say that the argument of the paper is directed, not against any and every interpretation of the theory of natural rights, but only against the individualistic interpretation which has been in traditional vogue in England and America. I make this note at the suggestion of my colleague, Professor Morris R. Cohen, who calls my attention to the recent work of Charmond, "*La renaissance du droit naturel*," in which the natural rights theory is interpreted in a non-individualistic manner.

judges might indeed be effective in eliminating certain forms of personal corruption; but it could hardly be effective in overcoming the legal self-contradiction of which we have spoken. For the judges who would replace those dismissed would be men trained in the same legal theories, and inevitably responsive to the same legal philosophy. Besides they would be in sworn service to a constitution which expressly embodies that philosophy.

Would the recall of judicial decisions effect a cure? Here we come, I think, to the root of the question. However great the evils which such recall would bring in its train, it might indeed be effective *if we as a nation were ourselves conscious of a solvent social philosophy*. But we are not. We are vaguely, more or less distressfully, aware that something is wrong, that we have not, often, the legislative right to accomplish what we deeply desire to accomplish, that liberty goes hand in hand with servitude, and the rights of man with oppression. But what the fundamental reason for it is, and what is the way out, we American people simply do not know. Thus granting that we had recalled the decisions—decisions rendered in faithful accord with our accepted national philosophy—we should ourselves have no coherent legal or political or economic philosophy to offer in terms of which later decisions might be more adequately rendered. The fact is, in short, that our normal American life exhibits the very self-contradictions found in our national philosophy. We believe implicitly—most of us—in the inviolable rights of private property even at the very moment when we realize the havoc to social welfare wrought by that very theory of inviolability.

To whom, for example, belong the inviolable rights of property—to the owner of various forms of capital, or to the owner of labor? If inviolability means unrestricted possession and use, then both of these rights can not be equally inviolable; for one of them, as we know—labor—is easily forced into submission by the other. What is, then, the true relation between the inviolability of a man's property in his labor and the inviolability of a man's property in his capital? The two inviolabilities would seem to be inherently self-contradictory.

Is the equitable relation between them that of a drawn battle—the property in capital, on the one side, and the property in labor on the other? Shall the state, then, recognizing the drawn battle, recognize the right of the laborer to organize for such battle? And if it recognizes that right of industrial organization, shall it protect him against persecution by employers for exercising that right in times of industrial peace? Or shall the state frown upon such extra-legal methods of adjustment, and either leave the individual owner of labor to his individual fate, or secure his labor rights, as to hours and

wage, through legislation? As to all this, of course, we are wholly unsettled. Our court decisions are now one way and now another.

Or is the difficulty still deeper? Does the inviolable right to one kind of ownership—the ownership of capital—grant to such ownership a wholly disproportionate power—the power, first, to extort more than its fair share of reward, and, secondly, to influence legislative bodies to the end of preventing the passage of laws curtailing that power? And is the way out of this difficulty, the removal, as far as possible, of such ownership from private to public hands?

We do not know. In this matter, we as a people are still almost wholly at sea. And our courts drift as we drift, now to this compromise, now to that.

Our deepest task, in short, to-day is the achievement of an economic or industrial philosophy that will be adequate to the full demands of a democratic civilization. We have to a degree wrought out a philosophy of *political* democracy. For a while we accounted that sufficient. But we have been realizing increasingly of late, through the sad and somewhat terrifying lessons of legislatures debauched by private enterprises, of courts owned and controlled, of political parties for the most part the subservient tools of the regnant economic powers, that political democracy is in fact impossible of achievement where there is not present a like democracy in the economic life of a people. But what are we to mean by economic or industrial democracy? I take it that as yet we, as a people, simply do not know. Thus there continues in our national life this conflict between an undemocratic belief and behavior in our economic life, on the one hand, and our fundamental democratic ideals, on the other; and it is this conflict that leaves us so vaguely distressed and unwhitting of our way.

More fundamental therefore than any of the reforms in our political or legal machinery is the reform in our national social philosophy, particularly in that aspect of the philosophy which is concerned with the idea of property. How to democratize ownership! With all our present vagueness, there can be no question, I think, that such a reform of our national philosophy is in process. Reforms of this kind are not made by single men, though often the single man strikes out the trenchant summary, nor, indeed, by legislative pronouncements. They occur as a result of increasing pressure of widespread social difficulties, and through the gradual awakening of men to new social needs. Such is the condition of our present day. The well-nigh universal, oftentimes violent criticism of our courts, where our undemocratic economic philosophy is displayed to us in its most uncompromising form, the social weepings and gnashings of teeth over decisions that hinder the prosecution of our earnest endeavors



for human welfare, are indications of our growing dissatisfaction with the national theory that is ours. We launch out indeed against the courts, but all the while, in fact, we are launching out against the inadequacies of our national theory; gradually we are framing for ourselves a new theory of law, economics, and politics. It is for this reason, above all, that public criticism of the courts as well as of our constitutional government, instead of being hushed as unseemly, indeed as sacrilegious, should be welcomed as the surest, healthiest means of the nation's emancipation from old doctrines and of its education to a more adequate economic, political, and legal understanding.

Again the vast unrest in the economic world, the growing recognition of the necessity for curbing economic liberty, of controlling, indeed of abrogating certain ownership, is clarifying the national consciousness both as to the character of this more deeply laid, problem and the way of its solution.

There can be no question, I think, that a new social philosophy of momentous import for democratic civilization is to be the outcome of this period of stress and storm. To this new social synthesis the vast and for the most part still ill-assorted results of modern economists, sociologists, social psychologists, political scientists, moralists, and philosophical jurists will be the essential contribution. It is not altogether improbable, I think, that we who are here will live to see the day when out of the conflicts and contradictions, the confusions and misunderstandings of the present there will rise a nationally accepted philosophy of social—not simply of political—democracy, momentous to the coming centuries as was the philosophy of Rousseau to the Revolution, of Grotius to nationalism, of Locke to civil and religious liberty. There is here a fascinating task for the philosopher of the present and the future—to grasp the essential contradictions of our present social order, and out of the sorry members of them to help rear the structure of a more adequate social theory. Thoughts, indeed, sometimes are greater than things, for thoughts often rule the destiny of things. As Hegel trenchantly put it: "In earlier days men . . . thought away freely and fearlessly. They thought about God, about Nature and the State. . . . But while they so thought, the principal ordinances of life began to be seriously affected by their conclusions. Thought deprived existing institutions of their force. Constitutions fell a victim to thought: religion was assailed by thought . . . the old faith was upset. . . . Philosophers were accordingly banished or put to death, as revolutionists who had subverted religion and the state. . . . Thought, in short, made itself a power in the real world, and exercised an enormous influence. . . . It became urgent therefore to justify thought . . . and it is this

examination into the nature of thought and this justification which in recent times has constituted one of the main problems of philosophy."

To-day it is such an examination into the nature of our social thought, political, legal, and economic, which is our chiefest task. Before it, all the temporary tinkering with this bit of machinery and that sink into insignificance. The day, in short, is ripe for a new, deepened conception of human rights and obligations, for a solvent "thought" that, in Hegel's words, will remove what is no longer trustworthy in the old beliefs—the old conceptions of liberty and property, of labor and wage—and in their place rear a firmer, more deeply and widely grounded structure of democratic mutuality.<sup>10</sup>

## V

After speaking thus strongly of the need for a readjusted social philosophy, however, I have perhaps made it imperative that I say no more. For it will now seem inexcusably presumptuous for me to venture a prophecy as to the nature of this more adequate social philosophy. And yet since the formulation of such a philosophy is an essential task for every one who pretends to serious philosophic interest, I may not as a professing philosopher escape my share of responsibility. Let me then risk the danger of immodesty and indicate as best I can in brief space what, to my mind, would seem to be the generating principle of the social philosophy now in process of formation in America.

<sup>10</sup> It is significant to note the confirmation of this view by a group of our leading teachers of law. In the General Introduction to the "Modern Legal Philosophy Series," issued by a committee of the Association of American Law Schools, we find the following: "'Until either philosophers become kings,' said Socrates, 'or kings philosophers, states will never succeed in remedying their shortcomings.' And if he was loath to give forth this view, because, as he admitted, it might 'sink him beneath the waters of laughter and ridicule,' so to-day among us it would doubtless resound in folly if we sought to apply it again in our own fields of state life, and to assert that philosophers must become lawyers or lawyers philosophers, if our law is ever to be advanced into its perfect working.

"And yet there is hope, as there is need, among us to-day, of some such transformation. Of course history shows that there have always been cycles of legal progress, and that they have often been heralded and guided by philosophies. But particularly there is hope that our own people may be the generation now about to exemplify this.

"Hitherto . . . our . . . outlook on juristic learning has been insular. Our juristic methods are still primitive. . . . Without some fundamental basis of action, or theory of ends, all legislation and judicial interpretation are reduced to an anarchy of uncertainty. . . . [But at last] we are on the threshold of a long period of constructive readjustment of our law in almost every department."

As we have noted, the circumstances of history—particularly those of the nineteenth century—have brought us far more clearly than ever to a consciousness of the interdependence of the members and activities of society. That no man liveth to himself alone is become a truism. But if no man liveth to himself alone, it follows that no man is alone responsible either for failure or success. The tubercle bacillus that infests my body and wrecks my life is borne, all unconsciously to myself, from some suffering neighbor, who likewise has received the same manner of infection through no overt act or fault of his own. Doubtless had my neighbor and I lived healthier lives we might not have succumbed to the germs. But my neighbor, by reason of financial stringency, is compelled to live in insanitary rooms, while I, let us say, am compelled to support my family at sedentary labor. Thus neither my individual effort nor the individual effort of my neighbor could serve to free me from the danger of infection. The wider and more complex conditions of our life, in short, are only slightly within our individual control. So, one's success as a business man, an engineer, a teacher, depends upon a thousand things—of family environment, of communal spirit, of educational opportunities—for which the individual person is not simply responsible. The more, in brief, we realize the inescapable interdependence of living creatures, the more we discover that society is not a loose aggregate of relatively independent individuals, but is rather an originally knit unity of life centers. An individual is an active point of differentiation within the unity; he is not, as the older theories tended to regard him, an area of independence.

For such a society, organically close knit, it is a poor and misleading statement of the life relations to lay prime stress—as our natural rights philosophy does—upon the fundamental freedom of each individual, and then, with the discovery that the sheer freedom of each individual is in practise impossible, to declare that such freedom must be limited by non-encroachment upon the like freedom of others. The difficulty is not that such a view is unworkable, for this is precisely the view in the egoistic spirit of which our American society—indeed, most modern society—is organized. Indeed, when we cease to sentimentalize about our glorious civilization, we note that the essential mechanics of modern society, particularly in the economic sphere, is a more or less nice adjustment between the claims of the one individual to all he can possibly get and hold, and the like claims of all others. In fact, to some, this seems the only possible principle upon which a society can be organized. Live and let live. Each one must concern himself with himself and must not tread—at least not unduly—upon his neighbor's toes. The serious social disorder of the present, they would say, arises out of the fact that a few,



the stronger and ruthless ones, are trampling, without thought or consideration, all over their weaker neighbors. If these stronger ones would but keep within bounds, if they would give the weaker neighbors equal room in which to move, society would live a harmonious life. Live and let live.

The difficulty with this view, I say, is not that it is unworkable, it is rather that it is too low, too negative, too self-stultifying. It is doubtless the only view possible for a certain stage of society. But it can not be held to be a solvent view. It presents the picture of a society, each member of which holds a suspicious eye upon the others, while with mind thus divided, he works feverishly at the enhancement of his own private good. It is a view without secure generosity, without the spirit of vigorous giving and serving. It has no glimmer, in short, of that profoundest and most virile of moral truths, that only he that loseth his life shall find it. A society organized in the spirit of each for himself, without encroachment upon others, may, indeed, if rigorously administered, be a relatively peaceful society; but no one would venture to say that it was a society cast in heroic moral mould, or even in a moral mould respectably ideal.

It is interesting to note that while the pregnant moral truth embodied in the sentence that he that loseth his life shall find it has been accepted as expressive of the highest moral ideality, it has been understood, curiously enough, only in an individualistic sense. It has scarcely yet been regarded as a truth expressive of what ought to be the spirit and organization of social life. For example, the truth has been understood to mean that I, the individual, should seek in the main to further the ends of other individual lives. How I am to do this is not indicated. In one way or another, I, the individual, am to seek to aid other individuals. Yet, as we have said, we have been increasingly realizing of late years that the conditions which shape the life of any individual are not only beyond his individual control; they are likewise beyond the control of any other single individual who essays help. Hence while the individual assistance of one person may ameliorate whatever ills another individual may experience, such service must ever fall far short of curing the ills. Any one, for example, who has taken a vigorous personal part in the effort to remove individual poverty knows how ineffective such effort is, how inevitably it calls for wider and wider cooperation; until suddenly there dawns the conviction that there is no adequate hope save in the concerted thought and will of the whole society.

The profound moral truth contained in the dictum that he that loseth his life shall find it needs therefore to be translated into its widest social terms. It will then mean that the only adequately moral society is one in which the persistent and essential spirit—a spirit

embodied in all the significant institutions of the society, domestic, economic, educational, legal, political, religious—is the spirit of communal cooperation. It must mean a mutuality of service not haphazard, not isolated and individual, a bit of help here and a bit of stimulus there, but a mutuality intelligently organized, cooperatively administered. Unquestionably much of the weakness of the Christian churches has lain in their failure to pass beyond the haphazard individualism of this great doctrine which it has been their good fortune to teach, to its essential social-ism—to the thought, in short, that the fulfilled ideal of a life-in-others is nothing more or less than a society organized in the conscious pursuit of a common or communal interest. It is this advance beyond the individualistic to the social and institutional interpretation of the highest of our moral truths that is doubtless to constitute the distinguishing achievement of our age.

Doubtless such a society is exceedingly difficult to realize, one in which all the commanding and widely significant activities are organized in the spirit of communal cooperation. Unquestionably, it could not be realized in ages preceding our own. The very physical isolations made communal cooperation on any large scale unfeasible, while the ignorances concomitant with isolations made the very thought of such cooperation impossible. Life was almost wholly a matter of group isolation and group antagonism. The ills of such society were born of the twin sisters of enmity and ignorance.

Modern life on the contrary exhibits an increasing drawing together of groups and people. Even the bonds of nationality no longer vitally separate; national enmities are for the most part the enmities of groups masking their commercial avidity under the guise of political necessity. The time is conceivable when the national bonds will have been reduced to the purely administrative lines of demarcation within a federation of the world; while within each lesser group the interrelations brought to pass by rapid communication and transit, newspapers and books, have become so intimate and far-reaching that the life of each person in the group is far more deeply than ever before a life in and with all his fellows. Modern life begins to exhibit, too, an increasing understanding of the facts and forces of its existence; it no longer lives largely in haphazard ignorance of means and processes. Poverty and disease are being increasingly understood. They are no longer divine visitations salutary to the soul, but noisome sores in the body of humanity that must be cured. Such phenomena in the economic world as unregulated production, with its wretched consequences of stagnation and unemployment alternating with wasteful oversupply; such phenomena as the hideous waste and bitter inhumanity of individualistic commer-

cial competition, with its concomitants of wage-slavery, poverty, child labor, criminality, and prostitution—phenomena due almost wholly to the fact that there is here neither understanding of communal interests nor cooperative effort to that end—such phenomena will tend increasingly to disappear as intelligent understanding grows of facts and causes and of the remedies that lie in concerted effort. Science is after all but a very young child of our civilization. It has scarcely as yet even attempted the big problems of our humanity. It has been concerned with matters on the outskirts. But unquestionably the time is not far distant when it will have grown to a strength and stature commensurate with the vital human issues, when entering the industrial, political, and legal realms, it will bring intelligent order out of the anarchy of unrationalized tradition and anti-social self-seeking.

This—the principle of communal cooperation, rather than that of individual rights—is, I take it, to be the generating principle of the new social philosophy. In all the social movements that are absorbing our interests—the hitherto undreamed-of extension of the public educational system, the growing acceptance by the public of responsibility for recreational opportunities, the growing public acceptance of responsibility for intemperance, prostitution, and crime that come of bad housing, of low resorts, of unhealthy and morally unclean streets, and above all, of inadequate wages, and the vigorous search of the public for measures of amelioration, if not of cure—housing regulations, readjustments of tax proportions, censorship, but most significant of all, public wage regulations, laws for accident compensation, unemployment and old-age insurance, and public control and ownership of economic enterprises—all of these bear witness to the increasing socialization of the various activities of our life, the lifting of these out of the sphere of free individual initiative into the sphere of communal initiative and administration. It is an age, indeed, of half-conscious, bungling attempts. But one who watches carefully may see that the old way of individualism is past, and that the way of the future is to be the way of social cooperation and integration.

In view of this, then, we may see how lamentably our courts are situated. They are perforce the spokesmen and executors of a social philosophy which even now, as a people, we have ceased in any vital or consistent sense to hold. They are sworn to the service of this older view, sworn to declare its outworn principles, to work havoc with its ill-adjusted machinery, sworn to a service which they may not abandon until, perchance, the old shall abdicate its right and make way for the more adequate new. The profoundest of our difficulties, then, lies not in our courts—case-bound and biased and even



corrupt though they are at times—but in ourselves. We are unclear both as to what is and what should be our national philosophy. Doubtless the coming years will witness, what will indeed in the result be an epoch-making event, the slow working into shape of a more adequate social philosophy. To this task the labors of the philosopher aware of the human obligations of his subject are peculiarly called.

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### A PECULIAR COLLECTIVE ILLUSION<sup>1</sup>

ON the night of August 1, 1912, at the Puget Sound Marine Station, Friday Harbor, Wn., E. Karrer and H. C. Stevens were the subjects of a collective illusion. The two persons named and D. H. Wenrich were sleeping in cots in a tent which measured  $10 \times 12$  feet. The tent was erected upon a wooden platform about  $12 \times 15$  feet. Walls of boards of about 4 feet in height and of the same dimensions as the tent, and a frame-work roof, over which the tent was stretched, were erected upon the platform. The site upon which this structure had been built was a steep, rocky hillside about 100 feet from Washington Sound and approximately 50 feet above the water. Numerous slender fir trees filled in the foreground between the front of the tent, which was kept open day and night, and the Sound. Inasmuch as the growth of the trees was not dense, patches of blue water were visible through the open door from the interior of the tent even when the occupants were lying in their beds. Owing to the steepness of the hillside, the front of the tent was supported upon posts about 10 feet in height and 5 to 6 inches in diameter. At the right front end, and at the left rear end, the platform was in contact with living fir trees, one of which (that on the right) was about 18 inches in diameter and the other (that on the left) was about 12 inches in diameter. The three cots were arranged parallel to the long dimensions of the tent with the heads to the rear of the tent and close to the wooden wall. E. Karrer occupied the left cot, H. C.

<sup>1</sup> The above case has a wider interest than appears on the surface of the report. It bears directly upon one of the oldest, most persistently debated questions in the theory of cognition. Ever since Heraclitus the subjectivity of sense perception has been regarded as proved by the fact of illusions. An illusion, it has been argued, is, in its very nature, private; and privacy means subjectivity. Now, Dr. Stevens exhibits to us an illusion which is not private. It is precisely analogous to the illusions which skillful legerdemain produces upon large audiences; but, unlike legerdemain, it involves no apparatus other than the natural equipment of the nervous system in a natural environment. That this raises grave difficulties for the subjectivity argument must be obvious.—Editors' Note.

Stevens the right, and D. H. Wenrich that in the middle. The latter individual was not subject to the illusion. In view of a possible explanation which I shall offer later, it is necessary to state that all of the occupants of the tent had been spending a considerable portion of their time in small boats collecting biological specimens and that *K.* and *S.*, not *W.*, had passed two hours from 9 to 11 o'clock of the same evening in a small motor-boat. A breeze of perhaps 10 miles an hour had been blowing during the early part of the night. *K.* and the writer went to bed at about 11:30 P.M. and each fell quickly asleep. At an hour which, unfortunately, was not determined, but which probably was not later than 1:00 A.M., I (the writer) awoke and sat up in bed feeling that the platform was afloat in the water and that it was moving into the trees. The bright light of a full moon cast dark shadows of the trees upon the ground and illuminated brilliantly the water of the sound. The illusion was persistent and I could not rid myself of the sensation of motion until I had got up and walked out onto the platform in front of the tent and looked at the solid ground beneath. After awaking and before getting out of bed I looked across the tent at *K.*'s cot and saw him sitting upright in bed looking out of the tent. I can recall no dream prior to awaking. That I was awake when I sat up in bed is attested by the fact that I remember looking across at *K.* and seeing him sitting upright, and also by the fact that I observed *W.* who did not wake up; by the act of getting out of bed to dispel the illusion and by the fact that I remembered calling out. *K.*'s account of his experience is here given in his own words.

"I felt the tent rolling slightly. I felt the tent and bed floating forward. I sat up in bed, looked out of the tent door over the water. The trees immediately in front of the tent seemed approaching quite rapidly due to our floating and I felt some anxiety as to our safety, wondering how to avoid a collision with the trees. I called out 'Where are we?' I heard *H. C. S.* exclaim 'Ho!' and I noticed him sitting up in bed. He immediately jumped up, ran to the door and looked out. In the meantime I felt somewhat relieved, thinking that he might guard against a collision while I might back the engine of the 'Ha! Ha!' (the motor boat). I had had no idea of the 'Ha! Ha!' or of a boat up to that time. At the time of calling I looked upon floor of tent where the clothes, etc., on floor appeared as ripples moving upon the water. Another glance, with recognition of the tent floor, dispelled the illusion. I was quite awake during the whole time, for I heard *D. H. W.* stir in bed and heard *H. C. S.*" (Written August 5, 1912, 10:30 A.M.)

The peculiarity of the experience lies in the simultaneous experience by two persons of an almost identical illusion which occurred at

the moment of awaking from a sound sleep. Neither observer was asleep and, therefore, the experience may not be called an hallucination. Apparently no dream state similar in kind to that which occurred upon awaking had preceded the illusion. An explanation which naturally, under the circumstances, can not claim to be proof positive, may be suggested. *K.* and *S.*, not *W.*, as a result of their evening in the boat went to bed with a pronounced motor adaptation due to the rocking of the boat. During the night, the motion of the wind was transmitted to the platform of the tent by the two fir trees (right and left) which were in contact with the tent platform. This motion was greatest nearest the trees, that is to say, on the right and left sides of the tent where *S.*'s and *K.*'s beds stood. The motion of the platform was sufficient to awaken both *K.* and *S.* but not *W.* The gentle swaying of the platform with the moving trees in the foreground and the water shimmering through them was sufficient stimulus to light up the *perseverationstendenz* of the motor *einstellung* which *K.* and *S.* had taken to bed with them. The vivid revival of the motor adaptation with the added suggestion from the sight of the water and the moving trees was sufficient to produce the illusion which was experienced. The marked *perseverationstendenz* of this particular form of motor adaptation is very well known and renders the explanation suggested highly probable. (Written 2:00 P.M., August 3, 1912.)

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Science of Logic.* P. COFFEY. Two Volumes. London: Longmans, Green, and Company. 1912. Pp. xx + 445 and vii + 359.

These two volumes of Professor Coffey present an appearance sufficiently formidable and abstruse to satisfy the most pedantic of academic minds. But as the author states, "the aim and scope of this treatise are more modest than perhaps its dimensions might suggest. It attempts, in the first place, to present in a simple way the Principles of the Traditional Logic expounded by Aristotle and his scholastic interpreters; secondly, to show how the philosophical teachings of Aristotle and the Schoolmen contain the true basis for modern methods of scientific investigation, inductive no less than deductive; and finally, to extend, rather than supplement, the traditional body of logical doctrine by applying the latter to some logical problems raised in more recent times. But the treatment is confined mainly to principles, and is meant to be suggestive rather than exhaustive" (Preface).

As this passage indicates, the book is more or less unique in its content



and aim. One of its purposes is to serve as a text-book, and it is for this reason, presumably, that formal logic is presented in patient and unsparing detail. The exposition, however, is interrupted from time to time with material of the most recondite character, in order to indicate and criticize the deviations of various philosophies, especially sensationalism and objective idealism, from the scholastic trail. "Logic has philosophy for its background. The study of logic raises many large questions, leading into various branches of philosophy" (Preface). Some of these leadings are followed to a considerable distance, notably in the discussion of the presuppositions of induction. Hence the book combines to some extent the features of a text-book in logic, an exposition of a philosophical standpoint, and a defense of Scholasticism.

The first division of the work, entitled "Introduction," consists of three chapters, discussing respectively the nature of man and the standpoint of "moderate realism," the scope of logic and the relation of logic to kindred sciences. The position adopted is dualistic, and the moderate realism advocated by the author is defined by differentiation from the realism which asserts that universals exist *as* universals outside the mind, and nominalism, which denies universals even as concepts (pp. 8-11). Difficulties arising from this mode of approach are passed on to metaphysics. Nevertheless the author discusses from time to time the relation of his standpoint to that of other writers, with reference to matters which depend directly on metaphysical considerations, such as the relation of concepts to reality, the distinction between analytic and synthetic judgments, and the doctrine of a First Cause. The comparison thus becomes a comparison of results or conclusions, without due consideration of the questions in which these divergent conclusions have their origin, a procedure which gives the author an advantage in that his standpoint appeals more directly to common sense, as also a certain facility in dealing with problems which must look for their final justification to some other source than logic. While it is held, for example, that scientific procedure leads us to the notion of a First Cause, the meaning of this metaphysical notion is not discussed. Similarly the view taken of induction rests on the distinction between *necessary* and *contingent* judgments, but the nature of this (equally metaphysical) distinction is left very much in the dark. Necessary judgments, *i. e.*, judgments "formulating relations which *can not be conceived otherwise than they are*" (p. 178) are not derived from the constitution of the mind exclusively, "but from the nature or constitution of the mind, *together with the nature or constitution of Being itself*" (p. 179). Contingent judgments, on the other hand, are such as can not be derived "from an examination of the terms themselves, from an analysis of the *comprehension* of the notions compared, and without appealing to any independent source of information" (p. 171).

Beyond statements of this kind the nature of necessity is left wholly undefined. And if we ask how the same being or reality can be the basis for contingent and for necessary judgments, the answer must be that "this ultimate question also belongs to metaphysics. The answer given by Scholastics will explain why they call the latter class of judgments

*metaphysical* and the former class *physical*. Physics studies being as revealed to the senses, *i. e.*, as subject to *change*, and as existing in the concrete conditions of time and space: physical judgments, therefore, are *in materia contingenti*. But the human mind has the power of abstracting from those changing conditions of concrete existence in time and space, and of considering the essences and attributes of things in a purely ideal or possible condition—non-temporal, non-spatial, non-changeable, and absolutely static. It does so in metaphysics; and, manifestly, Being when considered in that static condition, can and does give rise to those *necessary* judgments, which Scholastics accordingly call *metaphysical*" (p. 180).

Apart from excursions of this sort, and in spite of a protest in the preface against the "arid formalisms that pass for logic," the author devotes the first of the two volumes to the discussion of formal logic. He not only gives to the subject an exceptional fulness of presentation, discussing all sorts of *minutiae* that have accumulated in this congenial environment, but he permits his views on logic to take their coloring largely from this particular field. His definitions of concept, judgment, and inference are taken from formal logic and apparently are to be taken at face value. Concept, judgment, and inference are held apart as distinct mental processes, and the substantial results of modern logic in this field are passed over with little appreciative recognition.

The second volume contains two parts, one dealing with method, the other with "The Attainment of Science and Certitude." Induction aims, like deduction, at necessary truth; but its process is the reverse of deduction. It proves some one of the conceivable antecedents to be the real antecedent, and it does this by the indirect method of disproving the other alternatives (II., 55). Induction founds itself on the axiom of sufficient reason. "No doubt the logic of induction can not be understood without a *statement* of the principles which underlie the process. But a treatise on logic is hardly the proper place for their full exposition and *vindication*; nor is it our intention to go into them here at great length" (II., 56). It is presumably on this ground that the purposes of logic concerning causation are held to be satisfied when the statement is made that a cause is "anything which contributes in any positive way to the existence or happening of something else" (II., 62).

Since logic presupposes a metaphysics to which it may appeal for the justification of its fundamental principles, truth is sufficiently defined if we say that it is the conformity of the mind judging about reality with the reality to which the judgment refers. When the mind adheres firmly to a judgment which it knows to be true, it is said to have certitude. The objective evidence necessary to guarantee certitude is "simply the objective relation between two aspects of the same reality, between subject and predicate, shining in clearly upon the mind, and grasped by the mind in forming the judgment, in interpreting the reality through this mental act. It is, therefore, simply the *manifestation of reality to the mind*" (II., 212). When the objective evidence "is not grasped or comprehended subjectively with sufficient clearness to guarantee a certain assent," we have

opinion or probability. In this whole discussion there is scarcely a hint of the controversy concerning truth which has been in the limelight so many years.

This is not the place to discuss the relation that should obtain between logic and the other philosophical disciplines. It appears from Professor Coffey's treatment, however, that a more unfortunate status could hardly be assigned to logic than that which he bestows upon it. The moment we advance beyond the discussion of mechanical formulæ and common sense distinctions, which can scarcely be dignified with the name of science, we trench upon territory which is labeled, "No Trespassing." All the fundamental considerations of logic are determined elsewhere, and the logician, as logician, is not permitted to discuss them at all. It is to be expected, therefore, that Professor Coffey's exposition should rarely go beneath the surface of the subject, or that he should fail to throw light on important questions in logical theory. Loose definitions, questionable assumptions and unconvincing elaborations are the natural, if not inevitable result of such limitations. In view of these limitations, the book has many merits. It is interesting as an exposition of a point of view, and its contents are presented in a clear and simple style. The writer disclaims all consciousness of "having said or intended anything new or original. But neither has he intended to make a mere compilation. It has been his ambition to assimilate and analyze what he has learned from others; and, bearing in mind the requirements of beginners, to set forth the results of his own labors in the manner and order he considers most helpful to those for whom he has written."

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*Immanuel Kant.* OSWALD KÜLPE. Third edition. Leipzig: B. G. Teubner. 1912. Pp. viii + 153.

Since the "return to Kant" there has not been an uncritical acceptance of his teaching, even in his sometimes too admiring fatherland. Few books upon him, however, have been written by men so well fitted as is Professor Külpe to bring to the discussion a scientific viewpoint, and few works have so happily combined clear exposition and criticism with popular yet accurate expression.

Books about Kant are not so much interesting because they state what Kant thought as because they tell us how men of the present age regard him. Professor Külpe has allowed his point of view to appear throughout the entire work, which traces the development of Kant's thought, states the critical problem, reviews the contents of the three critiques, and ends with an appreciation of the man and his place; but we are given the clearest insight into his position in the chapters "*Raum und Zeit*" and "*Die Apriorität als Subjektivität und der Phänomenalismus.*" These, he tells us, he has again rewritten for this, the third, edition.

Külpe attacks the Kantian proofs of the *a priori* and intuitive character of space and time, and considers these to be inferences of thought,



idealized products based on perception. To the first argument, that external experience is impossible, unless the mind possesses an intuition of space previously to which to relate it, the author replies that we have immediate spatial relations only in experiences of sight and touch. In these cases the relations are present because spatial characteristics come to us just as other peculiarities of objects do. We may believe, furthermore, in a fixed external order of spatial relations since we can not give our impressions these relations arbitrarily. The second argument, that we may represent to ourselves an empty space, but never space as non-existent, fares little better. Külpe denies that empty space can be imagined, though it may be conceived. We may even have a non-spatial experience as of a being whose presence is indicated solely by its odor. Were space a subjective *a priori* factor it would form a poor basis for the exact natural sciences, because perception is exposed to numerous spatial illusions. Külpe attacks the third argument, that there is but one space and that it must be existent previous to all its parts, by again pointing out that space is not an accompaniment of all sense perceptions and that in sight and touch it is open to subjective variations. Space as a conception should be differentiated from the perception and imagination of space. Even though Euclidean geometry did rest on space considered as an intuition, that would be no proof of the impossibility of viewing space as a conception. To the fourth proof, that space is boundless and that no conception can be formed which embraces in itself a countless number of perceptions, the author rejoins that boundless space is only an inference. The right-hand argument is not valid, since space may be a conception as well as an intuition, and proof established from one point of view does not necessarily invalidate the truth of the other. The claim that geometry can not rest on a mere conception is countered by the statement that geometry may not be a science equally valid for all, if it rests on a subjective basis such as an intuition might give. The absolute space of Euclid and Newton is not our space-intuition, but an idealization, the product of thought.

Professor Külpe objects to the use of the table of judgments for the deduction of the categories, since all that is valid for conceptions may not be valid for objects. Philosophy and the individual sciences, especially mathematics and mechanics, must work together to formulate a table of categories. Kant through his combination of concept and object began the movement which Hegel and Fichte finished.

Kant sought by considering the forms of intuition and the categories *a priori* to win for the products of pure reason certainty and to degrade the world of the senses to mere appearance. The independence, however, is not genetic, but logical; and as soon as the categories and formal elements are applied to sciences other than those resting on logical presuppositions Kant is lost. The fact that he considered the mathematical sciences the only true ones is explained by the wretched state of the biological study of his day. Kant can not disprove the reality of the world of sense. Indeed, the fact that we can not think arbitrarily, but

meet constantly with restraining situations, points either to a preestablished harmony between our thought and the world, or else to the fact that the genesis of our thought lies in the world itself. Here we have Professor Külpe giving us his own position most clearly and with the greatest enthusiasm.

The volume is, altogether, one of the best small books on Kant and might well be published in some translation series. It is another instance of the possibility of really authoritative books in popular form at a very modest price—a possibility which the series "*Aus Natur und Geisteswelt*," to which the book belongs, has already abundantly proved.

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*Traité international de psychologie pathologique.* A. MARIE (editor). Paris: F. Alcan. Vol. I., Psychopathologie générale. viii + 1028. 1910. Vol. II., Psychopathologie clinique. xxiii + 1000. 1911. Vol. III., Psychopathologie appliquée. viii + 1086. 1912.

That there have been great advances and interest in our knowledge of abnormal mental processes during the past few years is well known, and the publication of this large work tends to confirm the belief. A literal translation of the title and subtitles does not give an indication of the contents of the three volumes, which deal largely, but not exclusively, with matters more properly pertaining to psychiatry. For these volumes there have been written long articles by over 40 contributors, and their international character may be estimated by the fact that only one contribution is from Germany (Ziehen), while Italy is represented by 7 articles and the same number of authors, and England by 2 articles (Havelock Ellis, Clouston). The editor has contributed to 9 articles, and over half of the work is by French authors.

Every contribution tending to advance our knowledge in the fields of psychiatry, psychopathology, etc., should have a welcome, but it is impossible for the reviewer to recommend this work to psychologists and others who are interested in the abnormal. To those who prefer easy and entertaining reading rather than exactness and critical evaluation of the data the work may be of interest. It is difficult to select from the whole those parts which may properly be recommended, but in general it may be said that the clinical volume, the second, is more nearly what such a work should be. It would take too much space to give the titles of the individual contributions, but they range from the chemistry of the brain to the description of psychoses in animals, from the discussion of mental evolution at the period of puberty to an account of insanity at different historical epochs, and from methods of electrical examination of the insane to the consideration of their statures, crania, anomalies, etc.

Several articles are worth mention. That on mental disturbances in animals will be of interest to comparative psychologists, who will find that Nass in 1820 described mental abnormalities in animals, that Friedreich in 1830 described a case of transitory mania in a cow, and that as late as

1888 Vogel attempted to develop a system of the psychic anomalies to be found in animals. Here also will be found references to such conditions as delirium, melancholia, and cretinism in animals, and psychoparalysis in dogs and horses, animal hysteria, and allied things of a bizarre nature. It is needless to say that in these accounts animals are considered like man, although there is some recognition of possible differences in quantity and quality of their mental processes.

The account of the effect of cosmic phenomena on mental states (by the editor) deals with the relation of nervous and mental diseases to changes in barometric pressure, heat, light, wind, humidity, electricity, the lunar cycles (!), eclipses (!), etc. All of these are grouped with other well-considered data, and the whole gives evidence of little critical judgment. In another chapter—on the application of experimental psychology to psychiatry—some history of the development of experimental laboratories is attempted, and certain of the supposed facts are given incorrectly.

Although the supreme value of psychoanalysis is not universally admitted, it is well recognized that it is important both in the examination and treatment of mental abnormalities, but to this subject there is devoted a scant 3 pages out of 3,000.

The proof-reading of the book is poorly done—within a space of five pages we find Kraepelin and Kroepelin, to mention only one instance. There are no general or volume indexes; some of the articles are accompanied by bibliographies (at times with inaccuracies), but many are lacking in this respect.

While some of the articles are valuable, the reading of most of them calls to mind the statement made by a reviewer of a similarly constructed German work—"that it appeared as if the individual authors had written their articles because they wished to know, rather than because they knew, something of the subjects."

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## JOURNALS AND NEW BOOKS

ARCHIVES INTERNATIONALES DE NEUROLOGIE. September, 1912. *Les psychoses dans l'histoire* (pp. 162-177): A. CULLERRE. — Absolute power and privileges exercise a pathogenic influence upon the intellectual and moral faculties of sovereigns, and give rise to a special form of monomania, known as Cæsaritism. *Aphasie motrice et agraphie, avec épilepsie jacksonienne faciale gauche d'origine syphilitique, durant un jour* (pp. 137-141): DR. BERNHEIM. — From a case of combined aphasia and agraphia, complicated with Jacksonian epilepsy, the author concludes that the graphic and phonetic centers either are different or send their impulses through different paths. *L'état actuel de la Psychoanalyse* (pp. 141-161): CH. DE MONTET. — Psychonalysis is no longer a mere branch



of medicine. It embraces the collection of all affective and emotional experiences of mankind from the point of view of psychical evolution. *Hallucinations cryesthésiques dans un cas de démence précoce* (pp. 177-179): DR. HALBERSTADT. — An account of a curious case of dementia precox in which one of the prominent factors was a sensation of chill constantly experienced in all parts of the body. *Revue des Congrès et Sociétés. Analyses bibliographiques.* MacAuliffe and Chaillou, *Morphologie humaine*: F. HELME. F. Le Dantec, *Contre la Métaphysique*. L. Perrier, *Le sentiment religieux a-t-il une origine pathologique?* B. Battistessa, *Du traitement de la paralysie progressive par la tuberculine*: L. MONGERI. M. Rusconi, *Les injections intramusculaires du zymargol dans le traitement de la chorée de Sydenham*: L. MONGERI. Ladame, *Encéphalite sous-corticale chronique*. Mme. Long-Landry, *Maladie de Little*. Hesnard, *Les fumeurs de chanvre en Orient*.

Wallin, J. E. Wallace. *Experimental Studies of Mental Defectives*.

No. 7. Baltimore: Warwick and York. 1912. Pp. vi + 155. \$1.25.

Ward, J. S. M. Brasses. New York: G. P. Putnam's Sons. 1912. Pp. vii + 159. \$.40.

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## NOTES AND NEWS

HENRI BERGSON, Litt.D., professor of philosophy in the University of Paris, and visiting French professor for the year 1912-13, completed his course of French lectures at Columbia University on February 18. An outline of the lectures, of which the general subject was "Spiritualité et Liberté," follows: February 3—Les nouvelles tendances de la philosophie. —Attitude de la philosophie vis-à-vis de la science et vis-à-vis de l'art.—Importance capitale du problème de l'esprit.—Rapport de ce problème à celui de la liberté. February 4—Des illusions où l'intelligence tombe naturellement quand elle s'attaque au problème de l'esprit et à celui de la liberté.—Croyance des anciens à la destinée.—Croyance des modernes à la détermination nécessaire de la conduite des individus et de la vie des peuples.—Influence constante que les mathématiques ont exercée sur la pensée des anciens et sur celle des modernes. February 10—De la relation de l'esprit au corps.—Dans quelle mesure le fait mental dépend-il du fait cérébral?—Danger des théories toutes faites.—Comment elles se sont insinuées dans la description et même dans la constatation des faits.—Nécessité de revenir à l'expérience pure et simple. February 11—De la relation de l'esprit au corps (suite).—Le corps considéré comme orientant dans une certaine direction particulière l'attention de l'esprit.—Comment le corps et l'esprit peuvent agir l'un sur l'autre. February 17—L'esprit envisagé comme une force.—L'élan psychique.—Signification de certaines maladies de l'esprit.—Caractère artificiel des difficultés soulevées autour du problème de la personnalité. February 18—Spiritualité et liberté.—A quoi peut servir une force

spirituelle et libre?—D'où vient-elle, et où va-t-elle?—Signification de la vie individuelle et de la vie sociale.—Possibilité d'une métaphysique fondée exclusivement sur l'expérience. His lectures in English, on "The Method of Philosophy: Outline of a Theory of Knowledge," which were given under the auspices of the department of philosophy, occurred as follows: February 6—The different kinds of philosophic doctrines.—Metaphysical and critical.—Inadequacy of the constructive method in metaphysics.—Illusions to which the critical method is liable: false problems and artificial difficulties in philosophy.—Need to return to intuition, but to expand it.—Movement and immobility. February 7—Change and rest.—Real duration. Apparent difficulties and illusory problems raised about the question of real duration.—The "self-contradictory" in philosophy.—Distinction between what is apparently or provisionally self-contradictory and what is really and definitely so. Examination of one or two notions from this particular point of view. February 13—Real extension.—Distinction between this extension and space.—In what sense extension, like duration, is indivisible.—How certain difficulties relative to matter and mind, and their mutual relation, arise from a misunderstanding of the character of extension and duration.—Examination, from this point of view, of the first two antinomies of the *Critique of Pure Reason*. February 14—First consequences: our experience, properly directed, attains absolute reality. An experimental metaphysics is possible, but can only be progressively built up.—Method that such a metaphysics must adopt. Necessity for recasting, not only "forms" in the Kantian sense of the word, but also "concepts" or "categories."—Examination, in particular, of the concepts of "unity" and "multiplicity."—Bearings of this examination on the theory of the nature of truth. February 20—*Causality and Law*.—Concept of *Cause* subordinate to that of *fact*. In what sense a fact is real, in what sense artificial.—Psychological origin of our belief in causality.—Metaphysical basis of this belief. February 21—"Generality" and "concept."—Radical difference between resemblance and identity.—Real and artificial genera.—Generalization, viewed as a function of life.—The treatment of concepts by philosophers.—Necessity of recasting the terms in which problems are set.—The part played by intuition.—Conclusion.

THE *Revue de Théologie et de Philosophie* of Lausanne, the publication of which has been suspended for several years, commenced a new series in January. The periodical will be published regularly under the editorship of Messrs. Pierre Bovet, Samuel Gagnebin, René Guisan, Charles Mercier, Henri-L. Miéville, Henri Reverdin, Arnold Reymond, and Maurice Vuilleumier.

THE Western Philosophical Association will hold its annual meeting at Northwestern University, Evanston, Illinois, on Friday and Saturday, March 21 and 22. There will be a joint session with the Western Psychological Association, probably Saturday morning.

ON February 14, Professor D'Arcy Thompson delivered the Herbert Spencer lecture at Oxford University on "Aristotle as a Biologist."

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### MAN AND FELLOW-MAN

AT every turn of my thought respecting the meaning of truth, I am met by a figure that has no dwelling on land or sea and whom I have come to call the Man Without a Fellow. It is strange that so lonely a phantom should have anything in his aspect to trouble the quiet of a philosopher, yet the more I consider him, the more the impression forces itself on me that he holds in his hands the fate of my philosophy and of the science of many another.

I say the science of many another must be concerned for the laying of this ghost, if ghost he be, yet it is exactly because the philosophers of our own day who I should have thought had most to fear from him have either noticed him not at all or passed him cavalierly by, that I wonder whether I can have understood these philosophers aright.

Have I, for example, caught the meaning of the instrumentalist when he insists upon the "social reference" of even the most intimate of our personal experiences? "The fact is," writes Professor Dewey, summing up the case for instrumentalism—"the fact is that the life, the experience of the individual man, is already saturated, thoroughly interpenetrated, with social inheritances and references. . . . Education, language, and other means of communication are infinitely more important categories of knowledge than any of those exploited by absolutists. And as soon as the methodological battle of instrumentalism is won . . . the two services that will stand to the credit of instrumentalism will be calling attention first to the connection of intelligence with a genuine future, and, second, to the social constitution of personal, even of private experience, above all of any experience that has assumed the knowledge-form."

Do I, I ask, take Mr. Dewey aright in supposing that he is here not merely calling attention to certain facts respecting the psychology of a being who happens to stand in various social relations with others of his kind; but rather that he is deducing from the very meaning of truth and error certain conditions without which truth and



error, and so experience, knowledge, mind, can neither be nor be conceived? He means, does he not, that consciousness is so essentially social in its reference that if there were no society to refer to, there would be no consciousness to refer? He means, in a word, that it takes at least two minds to make one, or, as Fichte has put it, "*ein Mensch ist nur unter Menschen ein Mensch?*"

If this is what the instrumentalist stands for, then the image of our man without a fellow must be as critical for his philosophy as for mine, and nothing could more quickly and effectively clear the way for his onward march than the removal of this enigmatic figure from his path. But if the instrumentalist means less than this—if he means no more than to observe that minds which happen to have been brought in contact are so profoundly affected by this accident of their history that the result is better symbolized as an interpenetration than as a point or surface contact—then instrumentalism may have called attention to an interesting fact of psychology, but I fail to see in what sense the categories used to arrive at this conclusion can be judged either more or less important than "those exploited by absolutists." For the absolutist is not interested in these historical accidents of mind, not merely because he hopes in the end to show that there are no historical accidents, but also because at no stage of his reasoning does it appear to him accidental that the finite mind owes its being and its meaning to its fellowship with another mind. For him quite frankly it takes two minds to make one, and one of the two is the Absolute. Therefore I should expect him to take up the instrumentalist's reflection on his categories in some such terms as these: I am trying, he would say, to arrive at a definition of truth, if you are only interested in some accidents that attach to truth as it is found in this or that empirical situation we have no quarrel, for we have no common problem. If, however, you have my problem in mind, then you must show that the categories you deem so important are suitable to the discussion of truth wherever truth may exist. They can only be so if thinking beings exist essentially, and not merely *per accidens*, in social groups. You must show that for you too it takes two minds to make one, that the man without a fellow is not merely a possible imbecile but an impossible square circle.

It is only on the assumption that the instrumentalist means to accept this challenge that I can suppose the problem of the man without a fellow to have more than a passing interest for him. But for the absolutist who makes the challenge the lonely being of my imagining can not but be vital, has been vital throughout the history of absolutism, and should be more than ever vital to the absolutist of our day. For in spite of Mr. Dewey's claim upon the gratitude of posterity for the service rendered by instrumentalism in calling atten-

tion to the "social constitution of personal, even of private experience," I can not think that posterity, supposing it to be duly grateful for the idea itself, will find much to choose between instrumentalist and absolutist in the matter of calling attention to the idea. Indeed, when I said that the image of the man without a fellow must be as critical for other philosophies as for my own, it was rather the absolutist than the instrumentalist I had in mind; for not only is it the central thesis of absolutism that the finite mind can not exist save in fellowship with God, but it is to historic absolutism that we owe the first *Deduktion* of the dependence of finite mind on finite mind. And the absolutist of our day is no whit behind his forerunners in calling attention to the social reference of the most impersonal as well as of the most personal and private of our experiences,—for Professor Royce, nature itself is a social concept, nature is that in the description of which many men agree, in the moulding of which to their harmoniously different purposes many men cooperate.

So it has seemed to me that Mr. Dewey's claims for the service rendered by instrumentalism in "calling attention to" a doctrine that was old before we were young were *tant soit peu* exaggerated. The school that invented the theory has not abandoned it, has not spared emphasis in continuing to call attention to it, has outdone all others in the bold clearness with which it has set forth its meaning.

And yet this last statement of mine is perhaps in its turn an exaggeration. If there can be no doubt as to what a Fichte means to prove in the opening of his "Rechtslehre," there are whole chapters of Hegel's "Phaenomenologie" that leave me uncertain as to what they are intended to establish, and I am quite prepared to be told that my understanding of Mr. Royce's doctrine is a complete misunderstanding. When Mr. Royce speaks of nature as a "social concept" I have taken him to mean that a non-social being—a man without a fellow-man—would lack this concept; that a finite mind shut off from converse with other finite minds would be without any notion of a world in space and time, following mechanical laws and heaving with great rhythms. But such is the delicacy of the issue here involved that were Mr. Royce or another to tell me that he had no such meaning, but that his intention was merely to point out the extent to which we who are as a matter of fact social beings are influenced by that fact in our conception of all things—not merely in our ideas of property, credit, love, hate, and such like mutualities, but in our notion of nature itself—if any one were to tell me this I could not gainsay him with chapter and verse precluding such interpretation. I should be left trembling alone before the image of the man without a fellow, abandoned to the laying of my own ghost in my own way since for me alone is the portent.

But for me portent there would seem to be and the ghost must be faced if it can't be laid. In a number of papers addressed to this association in previous years, I have found myself maintaining a thesis that may best be defined in terms of what it denies. And what it denies is the spirit of Augustin's saying—"*Noli in foras ire*—Go not out into the world; but return into thyself, for there in the inner man dwells truth." From this monkish sentence I have turned because I could find no way of getting at the truth about myself—even my innermost self—save by going abroad for it and receiving it as often as not at the hands of my fellows. It takes, I find myself having written—it takes all the science of all the world to tell whether I am really in love as I think I am, whether I am really in pain as I take myself to be, whether I really see the color red as I sincerely assert that I do. No one familiar with the history of modern philosophy will find anything new or revolutionary in such utterances, though their import be to deny even to an idea any immediacy of meaning that is more than a relative immediacy, any truth that can be established without appeal to another. Such denial is sympathetic with the development of many modern idealisms and it antagonizes only such philosophies as starting with an immediate datum of consciousness—sensation or feeling—attempt to construct a world, a society of fellow-men, it may be a deity out of these data. What it accords with most intimately is that experience of life which one may have for the trouble of living. Is it a sound disjunction that one who proclaims his love is either really a lover or really a liar? Is it true that laments are either final evidence of grief or proof of insincerity? Is the master of an art a convicted hypocrite when it is discovered that art for art's sake is not so surely the motive of his conduct, but that, free to exercise his mastery to his heart's content, he does so in infinite discontent until recognition comes his way? Is he not rather in his deepest heart uncertain of the truth about himself, of the reality of his mastery until it is recognized, acknowledged, confirmed to him by another? In short, is there not that in the very meaning of truth which makes every truth depend upon an appeal to another?

And if this necessity of appeal is evident when the truth to be established by it concerns the most intimate and personal of private experiences, is it not all the more evident when there is question of the truth of ideas respecting nature? Whatever else we may think of those hard facts and inexorable laws which make up our image of physical nature, we always contemplate ourselves returning from the empirical study of them with our hands more firmly tied. But who or what is it that ties our hands? Part, at any rate, of the answer is to be read in that recurrent phrase of scientific literature: "So-and-so reports that he has obtained such-and-such results, but



his observations remain unconfirmed by other experimenters." Experience so reported leaves our hands as uncomfortably free as before and we look to other observers to tighten our bonds for us.

It will readily be understood that this manner of reflection would leave me in closest sympathy with such utterances whether of instrumentalist or of absolutist as point out the dependence of an idea upon the appeal that it makes to another, and it was natural that I should have turned to these philosophers with my anxious question, But what if there is no other? What truth can there be for a man without a fellow-man to whom to appeal? Is it indeed true that my brother is so completely my keeper that without him I must dwindle and vanish? Their ways of answering these questions I must have imperfectly understood, for I find myself still addressing the same question to myself with what result the remainder of this paper shall set forth.

The situation from which we depart is in the nature of an antinomy. On the one hand we admit that a mind, to exist, must appeal to another; on the other we are not prepared to maintain that the conditions which bring into being such minds as we know, conditions of inheritance, education, intercommunication, are the only ones that could produce a mechanism reacting purposefully to the world about it. A first step toward the solution of this antinomy is clearly enough indicated, for if in order that we may attribute an idea to a finite being we must see to it that he is provided with another to whom to appeal, and if at the same time we place him in a situation that furnishes no Peter to his Paul, then we must regard this finite self as capable of being its own other.

I know that those who recognize in such a formula one of those amusing Hegelisms from the odd compulsion of which they have long since, praise God, emancipated themselves, will have nothing more to do with a "self that is its own other." But out of this situation I may be permitted to derive some amusement in my turn, for each of these emancipated ones is by way of congratulating himself on having become other than he was, without having ceased to be himself. And the truth of one's idea about Hegel will serve as well as any other example of truth to illustrate my meaning when I say that the finding of truth is indeed an appeal, an intercommunication between points of view; but every man, however complete his social isolation, is himself a society of points of view. If indeed he live with other men, their point of view respecting any truth, even one touching most intimately himself, his own emotions, his own mastery, may be worth as much as his own; but if he live by himself, his own other points of view may be depended on to try out his present

opinion—we say that he may *change his mind*. The first condition of there being a mind is simply a situation in which there is room enough for a change of mind; instead of Fichte's formula, No man without a fellow, I should conclude, No mind without a change of mind.

I am not sure whether the instrumentalist would accept this interpretation of his category of "social reference"; but it is certain the absolutist would not be done with me if I were to let matters drop here. He would lose no time in pointing out that our troubles were not over, but only fairly begun. "If," he would say, "truth involves an appeal from one point of view to another, which point of view holds the truth and how are we to know it? An appeal to truth is something more than a polite conversation between different view-points content to remain in such agreement or disagreement as their intercourse reveals." He would ask this question knowing full well that my answer must be, No point of view holds the truth, nor does any finite group of actually expressed opinions give us a way of calculating the truth. And to come at once to the point to which the absolutist would have me come, I may as well admit that the series of points of view to which we must appeal for the truth of the most private of our meanings is essentially infinite. "Then," the absolutist would urge, "some of these points of view, and of course an infinity of them, must be merely possible points of view?" The confession that such is my understanding of the case would probably end his interest in the matter, for absolutism might well enough be defined as the philosophy that flees from an infinite series to take refuge in an infinite mind. But from this very definition it follows that it is not from the infinite that the absolutist flees; he would distinguish between infinities and would represent himself as delivered from the bad infinite by an acknowledging of the good. Now the bad infinite is one that endlessly loses itself in bare possibilities—in bare possibilities that are for him impossible. He flees from infinite to infinite indeed, but from the possible infinite in which meaning is lost to the actual infinite in which meaning is realized.

With all the absolutist's criticism of the category of possibility I find myself in close accord. If I judge a proposition to be possibly true, it is because its contradictory does not follow from certain premises presupposed. Often enough these premises are tacitly presupposed and then we have the illusion that we are dealing with pure possibilities; but this is only illusion, the premises are there or the possibility is not there—take these actualities away and the possibility left on our hands is indeed too bare for presentation. Against the danger of falling into a way of thinking in terms of bare possi-

bilities, I would be as anxious as the absolutist to protect myself, and if I have escaped from an antinomy to fall into the pit of "permanent possibilities" I ask no one to join me there—the place is uncomfortably full and full of discomfort.

But while the absolutist's caution against bare possibilities is wise and admirable, his precaution against them is exaggerated. It is not enough for him to be assured that there is a core of actuality to an infinite series, he must be assured that it is actual in all its endlessness. Most of us, however, find no difficulty in handling an infinite whose law is given in a finite number of terms—and not merely some finite number, but a perfectly definite finite number. Such a series is that of the integral numbers, whose law is given as soon as the phrase "and so on" with which any such law must end is meaningful and unambiguous. But this phrase does become meaningful and unambiguous after the two equations,  $0 + 1 = 1$ ,  $1 + 1 = 2$  are written down; then and not till then is the third equation defined to be  $2 + 1 = 3$ . Since the series is infinite, no one can construct all of its terms without accomplishing a contradiction; but the terms that remain at any given time unconstructed are no bare possibilities, their possibility is a logical consequence of actually given premises, finite and definite in number.

The bearing of these reflections upon the nature of that infinite series of points of view to which an idea must appeal for its truth and meaning is obvious enough. I have said that there could be no mind without a change of mind; let me put the result in another and more definite form: It takes two points of view to make one, and both of these points of view must be guaranteed as actual before that infinite series can be constructed without an appeal to which no truth can be defined, no idea can have meaning.

Of the minimal situation which permits of ascribing an idea to any perceiver we may now draw a preliminary picture. This attribution is made by an onlooker *A* whose world contains a perceiver *B*, and the object *C* of *B*'s perception. It is essential to this situation that the perceiver *B* should himself be perceived; for "it takes two points of view to make one." As for the object *C* of this perception, it is doubtless inaccurate to speak of it as though it existed ready-made in *A*'s world; my meaning is that this world contains the actual material out of which the notion of the object may be constructed. Suppose *B* to be observed in the act of measuring the length of a rod. *A*, the onlooker, calls this measurement *B*'s idea of the length of the rod. In doing so he contrasts this single measurement with a series whose average, as the series progresses, is subject to a decreasing probable error and freed from one source after



another of constant error. Without the data and the method for constructing this series, object and idea lose their meaning together. The onlooker *A* sees clearly that the series is infinite, but there is enough that is actual to define this infinite and to keep its unrealized terms from becoming bare possibilities.

Nor is this infinite reference of the idea to other points of view the only series that develops from our minimal situation. The onlooker *A* takes to heart the lesson he has learned from watching, commenting on, and defining *B*'s idea and its object. From a new point of view he applies the result to the former situation. His world with *B* in it, a highway to truth stretching out before him, becomes itself the idea of a world. The philosopher sees his old self part of a new world, and in this world his old self stands in its turn facing an infinite highway at the end of which lies the truth about *B*'s idea and the object of *B*'s idea. A second infinite series is defined, but like the first it grows out of hard actualities and its possibilities are not bare.

In this analysis the otherness of the standpoints that I have called *A*'s and *B*'s, the onlooker's and the perceiver's, is a matter of definition; the otherness of the men who occupy these standpoints is an historical accident. My man without a fellow might occupy both, for such is the nature of the self that it can well enough be its own other. Nor do I see that a mind so isolated need be limited in its possibilities. True, a hundred men can build a house more quickly than one, but if that one happen to be a genius he might—give him time—build a finer house. Just so our dependence upon neighbors for the acquisition of knowledge is a question of speed; give him time and it all depends upon the manner of man he is whether our man without a fellow turn out imbecile or philosopher.

In view of these reflections, is the importance attached by the instrumentalist to his social categories altogether justified? I do not say that they are less significant than the categories exploited by absolutists, for if I have gone so far as to maintain that the man without a fellow will not be lost for lack of a brother hand to guide him, I must go to the extent of denying that he will need the everlasting arms to uphold him. In which conclusion I find a certain interest, for I have suspected at times that our lonely figure was less a homeless ghost than the being who dwells deep down under the familial, convivial, social surface of each one of us.

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PERCEPT AND OBJECT IN COMMON SENSE AND  
IN PHILOSOPHY

## II

## THE COMMON SENSE DOCTRINE AND THE PHILOSOPHER

BEFORE turning to the philosopher, I may be permitted to say a word about the man of science. It need be but a word, for I hardly think that it is worth while to point out in detail that the men who occupy themselves with the special sciences do not, in acquiring the specific knowledge and skill required of them, come to discard the plain man's treatment of percept and object as something easily outgrown, and to be regarded as the product of a blundering ignorance.

We may freely admit that the man who has never occupied himself with psychology gives little attention to percepts as such, while the psychologist may give them the closest attention; the one may never have asked himself expressly the questions to which, as others see him, he appears to be constantly furnishing answers, while the other lives in an atmosphere of sharply drawn distinctions. Nevertheless, can we hold that the psychologist rejects any of the distinctions dimly recognized by his less scientific neighbor? Does not he, too, accept both percept and object? Does he not recognize their independent variability? May he not raise questions as to the time and place of the percept, refusing to accept the time and place of the external occurrence perceived as furnishing the answers that he seeks?

And is either the psychologist or the worker in any other science which is concerned with the observation of things ignorant of the rôle played by the brain and organs of sense in the perception of objects? Does he not quietly accept the fact that we know things only as we know them? And does he not, in spite of all this, hold that "things," objects, and not merely percepts, are presented in his experience? Does he regard it as impossible to describe things "as they are"? Does he find it hopeless to attempt to distinguish between mere changes in percepts and real changes in "things"?

The common-sense doctrine does not appear to meet with criticism and to suffer a recasting at the hands of the man of science, as such. It seems to be accepted in all its articles. If common sense is inconsistent, so is science, as far as concerns the point at issue. It is only when we come to the philosopher that we find a genuine sifting of the material, and a conscious acceptance or rejection of the positions which are taken instinctively by less reflective men.

I shall discuss this work of the philosopher in a moment, but first I permit myself to call the attention of the reader to the remarkable fluctuations of interest which make themselves apparent to one who views thoughtfully the public that interests itself in philosophy. There is nothing precisely like it in the field of science, I think.

To be sure, scientific discoveries are always exciting attention and interest. The new is, as is natural, much discussed. It may be immensely significant for human knowledge. Sometimes a door is thrown open that gives novel and even startling glimpses into the treasure-house of the universe. Thus, the accidental by-product of a physical investigation in the laboratory at Würzburg, seized upon and subjected to scrutiny by an acute and trained intellect, results in a blaze by the light of which the complexion of things is surprisingly changed. We are introduced, if not into a new world, at least into regions of our old world hitherto uncharted and even undreamed of.

If the public interest in such a discovery wanes; if men say less about it than they did a few years before; it is not that men have come to the conclusion that the discovery was unimportant. It is that the new truth has been added to the store of old truths which are valued, but which do not occupy the center of attention because men are seeking to make some further addition to the store. They may be accepted more unquestioningly than they were at the time when they were most eagerly discussed.

Such achievement in the discovery of the indisputably new, which may come to be the indisputably accepted, seems to beckon less encouragingly to the philosopher. Again and again philosophies have arisen which have claimed, and have appeared, to set nature and man in a startlingly new light. There has been an illumination—a quite sufficient blaze to set men running and shouting. But has not experience taught us that, after a little time, the fire may be expected to die down, and to take a not exceptionally prominent place among the other small fires scattered over the horizon, at the one or the other of which this or that group of men may be found warming the hands and cheering the eyes? There is usually some fire which occupies the center of attention and creates more or less of a disturbance. In the general public interested in philosophy there seems to be something like a permanent weakness for running to fires. But it is rarely the same fire that draws the crowd for many years together. Quite recently we have seen this fact illustrated in our own country, where what was a veritable stampede has given place to comparative indifference, and those who had faced excitedly in one direction seem about ready to seek a new center of excitement.



To the reflective it seems not unnatural that there should be such fluctuations in the public interest and attention. The philosopher, as such, is not a man who is dealing with new facts. He is not one who has, by some happy chance, wandered into a wholly undiscovered country. The material with which he works is the common stuff of human experience, and the distinctions which he tries to make clear are distinctions of which the implicit reason of mankind has long had to take account. If, when the philosopher brings us his revelation, he himself neglects to take account of that implicit reason—if he treats human experience as though no one had enjoyed it before him—he may interest us, charm us, startle us, dazzle us; but he can scarcely leave with sober men a permanent conviction of the supreme value of his message. Reflection is no new thing; the materials which it must use are not something quite recently brought to light. That men should think they have made a really important discovery when their attention has been caught by some aspect of experience upon which they have not seen emphasis laid before is to be expected. That they should find other aspects of experience soon acting as a damper to their ardor is equally to be expected.

And now for the philosopher's treatment of percept and object. A given philosophy may lay much stress upon one element in what has, in the last paper, been put forward as the common sense doctrine, and it may ignore or reject others. Whether this is just or not is, of course, a fair question; but it is surely a question to be decided only after careful reflection. We may not reject lightly what seems to be vouched for by the common experience of mankind. We may not ignore without a thought assumptions which appear to have their place both in common thought and in science, which work satisfactorily, and which lead, as far as can be seen, to no ulterior inconveniences or perplexities. That emphasis upon one element recognized in the common sense doctrine may lead to the denial or to the ignoring of another—that it may set one in opposition to some of the articles of the plain man's creed—seems to be revealed by even a cursory review of various well-known types of philosophical theory. Let me illustrate this.

I. Suppose that much weight is given to the principle that percept and object are ever to be kept distinct, that they vary independently, that the object may continue in existence when the percept has ceased to be. Suppose, furthermore, that one is keenly conscious that percepts must be regarded as, in some sense, a function of the constitution of the percipient creature. Suppose, still further, that one feels that one must hold on, at all hazards, to the *object*, and must keep intact the distinction of percept and object

with which one seems to start out in all one's dealing with things. What is the natural outcome of a reflection that concentrates its attention upon these points to the exclusion of others?

Has the matter not been brought before us again and again in the history of philosophy? What comes of "drawing within," one by one, all those things that can be immediately experienced, and of contrasting with them an ever-receding "object" which grows more and more indefinite and illusive as the reflective process grows more consistent and thorough-going? Does not this splitting apart of percept and object naturally result in such a dwindling and disappearance of the object that the apparently significant contrast of percept and object with which we started has been replaced by a distinction between what is given in experience and that unknown or unknowable something against which we have all in turn exercised our skill in polemic, and which it is the fashion to hold up to scorn?

Manifestly, a philosophy of which this is the outcome has not done justice to all the elements in the common sense doctrine. The plain man may claim that he never has had, and never can possibly have, any interest in such an object as this. The man of science may hold that no object which he has ever attempted to describe, and no object that the progress of science can ever attempt to reveal, can have any relation to this so-called object. Does not this philosophy appear to have quite wandered away from the problem of percept and object as it presents itself in our common experience? Is it busied with a fictitious problem? Has it missed the whole point? Or is common sense in the wrong from the outset?

II. Suppose that a philosophy gives weight to much the same considerations as those dwelt upon at the beginning of the preceding section, but sees the futility of insisting upon an object that can not conceivably ever be an object to any one at any time. Suppose that it still recognizes the distinction of percept and object, but, in view of the considerations which have fettered its attention, it absorbs, so to speak, the latter into the former. Something like this was done by Berkeley, as we all know. He did not make the object identical with any single percept, but he refused to recognize its independence of percepts. In the percepts of some mind or minds it had its being.

And Mill followed in the same path. His "possibilities of sensation" have no blood in their veins save what they draw from percepts. In so far as one does not unwittingly turn them into "objects" of the unnatural sort discussed above, they appear to be nothing more than the shadows of percepts. Several men of science of our day, having wandered over into philosophy, have treated objects as did Berkeley. The object has become to them a something *composed* of sensations. On reading their utterances, we all

cry out "subjectivism!" and we hasten to show that their doctrine, brought to a clear consciousness of itself, must, in despair, destroy itself.

That they have laid stress upon certain things accepted as fact by common sense, no one can deny. But have they accepted all? Have they been guilty of misconception and exaggeration? Certainly their conclusions, expressed in plain, every-day language, appear incongruous and absurd. Men talk as though they treated sensations, ideas, percepts, in one way, and objects, in quite another. If the latter are really composed of the former, the same stuff, precisely the same, why this difference of treatment? How about the independence, or relative independence, of the object, accepted in common sense and in science? Is it not simply ignored in these subjectivistic philosophies? Yet the rôle played by this independence, both in common life and in science, seems altogether too important to be ignored.

III. Subjectivism appears to be, for the time being, in eclipse. Even the idealist, however unwilling he may be to write himself down a subjectivist, is told to draw his blade and stand on guard. Rather an aggressive band of realists has arisen to champion the object—more than that, to champion its actual presence in experience. What is given in experience is not, on this view, a representative, a copy, an indication, of the object; it is the object itself. Consciousness must not be regarded as a something that intervenes, a veil that covers and disguises the "thing." The thing is *there*; it is *given*; its immediacy is as assured as is that of anything else in our experience.

In writing these sentences, I am describing what seems to me to be a present-day tendency sufficiently marked in certain quarters. I am not attempting to define the position of a single writer, or to quote his words. The tendency is the extreme reaction against the subjectivism discussed above.

That it bases itself upon a principle recognized in common thought, and, as it seems, tacitly accepted by science, appears plain enough. Does not the plain man take it for granted that objects are directly given in experience? Does not the man of science assume that things can be observed and described? Does either find himself embarrassed by a veil or medium which disguises the object and puts it at one remove? Then, why not say simply that what is given is the object and leave the whole matter there? Why confuse things by talking about percepts and their variability? Why emphasize the senses and the central nervous system, and dwell upon the different guises under which objects present themselves to the same sense and to different senses?



Why? Because these stones of stumbling actually lie in our path and have to be gone around or stepped over every single day. They are commonplaces of our ordinary experience; they beset the scientific investigator at every step of his progress. Fatal to investigation they can not be, for investigations, scientific and unscientific, actually do go on, and end in results. The perplexing facts may be ignored in the sense that the attention may not expressly occupy itself with them. But they must be taken account of, in some sense, nevertheless. Are objects ever presented except under some guise? Has the guise no significance at all? If we deliberately reject all the "guises," what can the object mean to us? Common sense appears to accept tacitly all the guises, to recognize the significance of the conditions under which each is given, and yet to hold to the fact that the *object* is given—given as *object* and not merely as *percept*. Is it permissible for a philosophy to emphasize the latter of these positions at the expense of the former?

IV. Suppose that the philosopher lays much emphasis upon the pervasively volitional character of our mental life, and points out that the light under which men see the world is not independent of their desires and purposes. Is he not calling attention to a truth perfectly well recognized by men who are not philosophers? Common sense appears to accept without question the variability of the percept, and surely no plain man would deny that our choices from moment to moment have much to do with the aspects under which things are experienced. We can put ourselves in this or that position with respect to objects; we can, under the influence of permanent interests, come to embrace in our experience whole systems of objects which, had we not had those interests, would certainly never have attracted our attention, and many of which would, perhaps, never have been experienced at all. He who seeks, finds; he who elects to close his eyes does not see.

Even the interests and choices of those who have lived before us are not without significance for us. It is recognized on all hands, and not merely by the philosophers, that our problems are, to a great extent, set for us by others, and that others influence us to look for their answers in this direction or in that. Common sense, where it is in the least reflective, recognizes as much as this. Does any man doubt that, if I am not interested in a thing, it may pass by me unheeded? Does any man doubt that others may call my attention to things, to aspects of things, to the significance of things for human life?

In recognizing all this, is common sense doing anything more than recognizing the variability of the percept commented on above? Is it not simply accepting the fact that the desires and volitions of

men have something to do with the selection of the particular guise under which objects or systems of objects may be given in experience?

But does the fullest recognition of the significance of desire and volition in this field imply that common sense even tacitly admits that they have the same significance when we are dealing with *objects as such*? Could the plain man, could the typesetter, be possibly induced to accept the statement that our inattention to typographical errors really tends to make them "unreal"? Does the scientist ever dare to use such a principle in his dealings with an undesirable element in a compound which he is investigating? The concrete is the touchstone of abstract theories. The laying aside of a philosophical terminology, and the adoption of plain and simple language, may be, in effect, the discarding of a cloak.

If, then, a philosophy lays stress upon the fact that the character of our experiences may be accounted for, in part, by having recourse to the interests and choices of men, and, if it does no more, it seems to have proclaimed the secret of all the world, and to have brought no new revelation. But, if it does more; if it speaks a language which suggests to us that we can, by taking thought, add a cubit to our stature, does it not come into conflict with a doctrine as clearly recognized by common sense, and, apparently, as plainly revealed in our experience, as is that of the variability of our percepts and their relative independence of objects? That such a language has recently been spoken by some, can scarcely be denied. Must not he who belongs even to the moderate wing of such a party justify his statements in detail, and with constant references to concrete instances, if he would clear himself of the charge of subjectivism?

The common sense doctrine seems, then, to be many-sided. When the plain man insists that he perceives an object, now under this guise, now under that, and never under no guise at all, does he resolve the object into percepts, or deny its existence? When he recognizes the significance of his senses, of his desires, of his choices, does he repudiate the independence of the object? Does he ever put the object, as such, at one remove, and make it a thing never really "given" in experience?

Each philosophy commented upon above seems to have one foot on the common sense doctrine. But it appears to emphasize one element in it to the detriment of others. The several philosophies do not appear to be at one touching the element that should be emphasized. Has the philosopher, in each case, exaggerated one truth at the expense of others? or is common sense inconsistent, and in need of correction at the hands of the philosopher?

I have no intention here of putting forward any doctrine of my

own. What I have to say I have said elsewhere<sup>1</sup> as clearly as it is in me to say it, and there is little profit in mere repetition. I may, however, record the conviction that each type of philosophy commented upon above has recognized a truth, that each truth finds its implicit recognition in the common sense doctrine, and that it ought to be possible to do justice to these truths without falling into a tangle of inconsistencies. It is to be expected that, from such a mutual adjustment, there should emerge a doctrine more moderate and less striking—perhaps, less interesting—than what may be looked for where the distribution of emphasis has been more one-sided.

In closing, I may be permitted to dwell upon a point which seems to me to possess a greater importance than that which is usually conceded to it. It is that of the nature of the language which should be used even by the philosopher in discussing such problems as the one we have been considering.

I have said that the concrete is the touchstone of abstract theory. By this I have by no means meant to indicate that abstract theory is to be discarded, or that abstract and even highly technical language is in all cases to be eschewed. I suppose no cultivated man in his senses would wish to rob the mathematician of his system of symbols, or to denude other special sciences of a labor-saving terminology which has been coined with much thought and care, and which fixes generally accepted distinctions that might easily be lost were they not embalmed in certain words and phrases or even in what seem to the uninitiated cabalistic signs. And surely no one who has the slightest appreciation of the methods of science can feel justified in maintaining that trains of abstract reasoning should at every moment be interrupted by a precipitate descent upon the concrete fact which alone gives significance to every formula.

Nevertheless, it remains true that the concrete is the touchstone of abstract theory; and it is equally true that one runs a certain risk in coining technical terms and in entrusting oneself to the convenience of the abstract symbol. The danger is palpably greater in some fields of investigation than in others. It is, I think, greatest in the philosophical sciences, where the facts supposed to be dealt with when a writer uses this or that constantly recurring technical expression are by no means admitted by all competent judges to be facts at all.

In such cases a direct return to the concrete and to common and familiar forms of speech may not necessarily be a mere inconvenient interruption of a justifiable flight. It may result in an exposure of the truth that the flight should never have been undertaken at all; it may amount to a revelation that the word or phrase one is using

<sup>1</sup> "The World We Live In," New York, 1912.



is an empty one, or that the symbolic statement carries with it a misconception of the experience with which one is supposed to be dealing.

It is far harder to judge whether a man is talking significantly or not, when he uses a language which departs widely from that of common life, than it is when he employs the common phrases which have a meaning for us all. We do not habitually think in algebraic formulæ, nor can most of us check off readily the real worth of a statement when it is placed before us in such a form. The speaker may be saying something wise or he may not; it is not easy for us to say, and few take the trouble to find out.

In philosophy, I do not believe that the convenience of using technical and abstract expressions—where such can be avoided, as I believe they may, in most instances—can counterbalance the danger which one incurs in having recourse to them. In support of this statement I shall give but two illustrations.

Suppose one maintains: "Every element in the objective order of experience may conceivably take its place in the subjective order also;" and suppose the man to whom he is speaking adds: "And every element in the subjective order may take its place in the objective order." Is it as easy to judge whether one should give or withhold one's assent, as it would be if the first speaker had said: "Every aspect of every material thing can conceivably be known;" and the second had continued: "And everything that can conceivably be known—even my dream of last night, or the centaur which I am now imagining—may have its place in the material world"?

Again. We have seen the logicians examine such a statement as "that inkstand is black," turn it into " $a$  is  $b$ ," and then ask themselves, with shakings of the head, what mystery of identity underlies the fact that  $a$ , which is  $a$  and not  $b$ , can still truly be affirmed to be  $b$ . Suppose we leave  $a$  and  $b$  and come back to the concrete statement. Is there any man, learned or unlearned, who, when he sits at his desk, and, raising his eyes, exclaims "that inkstand is black," ever means to assert that one thing, which is manifestly *not* some other thing, nevertheless is that other thing?

The formula is general and abstract. It fits, among others, such statements as "this horse is that cow," and "red is not red," in which case it expresses the absurd. But surely this has nothing to do with the judgments that men pass upon the colors of the things about them, and gives no indication of what actually takes place in their minds when they form judgments. When abstract formulæ seem to result in mystification, a descent upon the concrete is, as the physicians say, "indicated."

Now, in dealing with percept and object, we are not in a realm

which belongs exclusively to the few who have appropriated the latest discoveries of the sciences. We are dealing with what has its place in the realm of common experience. Men, plain men generally, are more or less at home in this realm, and we can not assume that generally received opinions are wholly to be disregarded. If we speak to such men in an unknown tongue, if we describe to them their familiar experiences in abstract and unfamiliar language, they will certainly not understand us, and any answers they may make to our questions can not be of service to us. It is quite likely that, by so speaking, we may prevent even our colleagues, who may have a language of their own, from understanding us, and that we may give rise to profitless discussion. It is not impossible that we deceive ourselves as well as others, contenting ourselves with words and phrases, when our whole endeavor should be to bring clearly before ourselves the most concrete and commonplace experiences, and to overlook none of their aspects.

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### CONSONANCE AND DISSONANCE<sup>1</sup>

THE facts of consonance and dissonance imply a large number of psychological problems: of sensory perception, of representation, of judgment, and of feeling—problems which, to a great extent, are capable of exact experimental analysis. In the historical development of these problems, the psychological point of view has but lately been differentiated from the metaphysical, the physical, and the physiological.

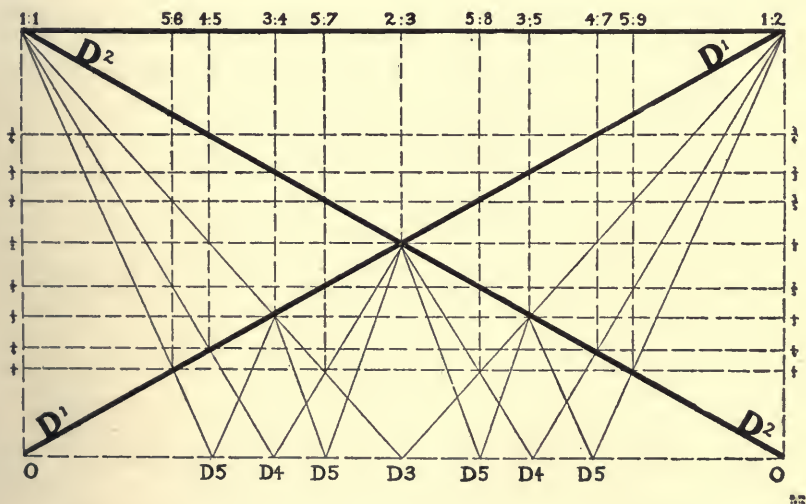
Helmholtz, on the basis of modern epistemology, first treated the subject in a purely empirical and scientific manner. Psychologically speaking, he left to us numerous intricate, but yet not hopeless tasks. His theory puts the main stress upon the harmonic *overtones*, their coincidences and mutual disturbances. Though modern criticisms of this theory, such as that of Stumpf and Lipps, overshoot the mark, the theory itself is far from being completely satisfactory. It does not explain the facts of tone-combinations with no, or with only a few, overtones.

Lipps's theory of unconscious rhythms is more metaphysical than scientific, and is not in accordance with ascertained facts. The theory of "fusion," held by Stumpf, is based upon interesting experi-

<sup>1</sup> This article is a summary of two lectures, given (with demonstrations) before the New York Branch of the American Psychological Association, and before the late meeting of this association at Cleveland.

mental results. However, aside from some discrepancies with experience, it recurs too prematurely to a physiological hypothesis and neglects a complete analysis of the conscious data.

In order to analyze all the phenomena, which the hearer consciously perceives at different intervals, the writer tested the matter with a large number of intervals and with independent subjects having no knowledge of the objective relations. Very soon he noticed the fundamental importance of the difference-tones for the perception of all the degrees of consonance and dissonance. Even two simple fundamentals regularly produce 5 difference-tones, the vibration-numbers of which are to be found by a continuous subtraction of the already existing tones. Thus, for instance, the minor third, 500:600 gives the difference-tones,  $D_1=100$ ,  $D_2=400$ ,  $D_3=300$ ,  $D_4=200$ ,  $D_5=100$  (coincident with  $D_1$ ).



In the accompanying chart the upper horizontal line symbolizes the continuous enlargement of an interval, starting from the unisone (1:1), passing through the two thirds, the fourth, the natural tritone (5:7), the fifth, the two sixths, the natural (4:7) and the minor seventh, to the octave (1:2). All of the changes of the difference-tones, corresponding to this range of intervals, are represented by the unbroken lines below the upper line. The vertical dimension of the figure signifies the pitch of the difference-tones as it increases or diminishes between the vibration-number zero and that of the lower fundamental. It is obvious that consonant intervals are characterized by exceptional relations of all their partial tones.

The general law holds that a difference-tone is related to every other simultaneous tone (either a primary or a combination-tone) in



exactly the same manner as two simultaneous primary tones are related to each other. They coincide and strengthen each other, if they are of the same pitch. They give beats, roughness, and noises, they produce an intermediate tone, and make each other lower or higher, if they are near enough together. Now, the phenomena, due to the difference-tones, are in exact correspondence to the degrees of consonance and dissonance. The most perfect *consonances* (unison and octave) have no distinct difference-tone at all. The more imperfect the consonance, the larger the number of difference-tones, and the greater the consequent danger of mutual disturbances. The fundamental phenomenon of all *dissonance* consists in the existence of a *mistuned unison* at the bottom of the total acoustic complex. As regards the consonances and their mistunement: the purer the interval, the more distinct and intensive (the clearer and smoother) are the remaining difference-tones, most particularly the "characteristic" one, which always corresponds to the ratio-number 1.

In the concrete perception of tone-combinations—on account of the relative frequency of the intervals and their similarity to single musical sounds—several associative factors cooperate.

The objections made by Lipps and Stumpf to this theory neglect these associative factors. On the other hand, Stumpf, in his discussion of the theory, treats as being dissonant some intervals, such as 5:7, which originally are characterized in the sense of imperfect consonance, and only for historical reasons are excluded from our musical system. Finally the immediate perception of consonance and dissonance is not independent of the absolute pitch. Psychologically speaking, consonance and dissonance seem to have originated within the limits of the human voice.

The relations of difference-tones that we have described systematically explain the fundamental conditions of the real phenomena of fusion and many other facts, which Stumpf's theory does not pretend to explain; for instance, the dissonance of the excessive triad like *c-e-as*.

Successive tones can be called consonant or dissonant only in a translated sense of the word. However, several of the phenomena corresponding to them, like the facts of *tonica*, are in part conditioned by the laws of perception of simultaneous tones.<sup>2</sup>

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<sup>2</sup> Full reports of the author's experiments and theory are to be found in *Philosophische Studien*, Vols. 16, 17 (1900-1901); *Archiv für die gesamte Psychologie*, Vols. I., II. (1903); *Psychologische Studien*, Vols. I., II., IV., V. (1906-1910).

## REVIEWS AND ABSTRACTS OF LITERATURE

*The Problems of Philosophy.* BERTRAND RUSSELL. New York: Henry Holt and Company. Pp. viii + 253.

This stimulating little book, one of a series written "for the general reader as well as the student," contains fifteen keen essays, as follows: (I.) Appearance and Reality, (II.) The Existence of Matter, (III.) The Nature of Matter, (IV.) Idealism, (V.) Knowledge by Acquaintance and Knowledge by Description, (VI.) On Induction, (VII.) On Our Knowledge of General Principles, (VIII.) How *a priori* Knowledge is Possible, (IX.) The World of Universals, (X.) On Our Knowledge of Universals, (XI.) On Intuitive Knowledge, (XII.) Truth and Falsehood, (XIII.) Knowledge, Error and Probable Opinion, (XIV.) The Limits of Philosophical Knowledge, (XV.) The Value of Philosophy.

Mr. Russell tells us in a one-page preface that he has confined himself to those problems in regard to which it seemed "possible to say something positive and constructive, since merely negative criticism seemed out of place." He has, therefore, either discussed very briefly or omitted altogether many topics much discussed by philosophers. The unpublished writings of Mr. G. E. Moore and Mr. J. M. Keynes, so he tells us, were of help to him in the formulation of his somewhat original views upon sense-data and induction, respectively, while the suggestions of the editor of the series, Professor Gilbert Murray, were of great profit.

In this little book Mr. Russell has set his face against recent dominant tendencies in English thought. And, indeed, the volume constitutes further evidence of what may be called a rising tide of a twentieth-century Platonism. This is not surprising; the recent emphasis upon relativism calls for it. That such a clear statement of Platonic realism should come from Cambridge is not out of keeping with her traditions.

It is, however, not unlikely that Mr. Russell will be sharply criticized in some quarters for his efforts to limit the task of philosophy in the manner that he does. (In his opinion, if one seeks by the study of philosophy to bolster up dogma or personal views of the universe; if one hopes thereby to solve the problem of evil, or even to establish the essential rationality of the universe, he has misconceived the function of philosophy. Such hopes are vain.) It is not a difficult matter to show that all notable efforts in that direction have come to nothing; the proofs set up do not withstand critical analysis. The ancient belief that that philosophical reflection affords some mysterious insight into the secrets of the universe is not to be countenanced. Philosophy is, to be sure, an attempt to answer ultimate questions, not after the manner of common sense or even of science, which in such matters is too often careless and dogmatic, but critically; for criticism is of the essence of philosophy. But the knowledge thus gained does not differ essentially from that of the special sciences. Most of the great thinkers of this class have based their case upon the self-contradictions of the world of appearance; for example, Kant in his conception of space, time, causality, etc. But mathematicians have not only shown that space, as we commonly think it, is possible, but

that there are many other possible kinds of space. The same thing is true of time. And what has happened in the case of space and time has also happened in the case of logic, which, far from being a "bar to possibilities," has become "the liberator of the imagination," and thereby offers not merely one world, but a wealth of possible worlds.

Mr. Russell's unqualified confidence in the essential features of Platonism is shown in his examination of the doctrine that synthetic judgments *a priori* are of unique character. While Kant is to be given the credit for the discovery of synthetic propositions, his theory that they can be accounted for only by the introduction of some transcendental factor of unity is, for Mr. Russell, merely interesting. At first blush, to be sure, such judgments do possess mystery; in some strange manner they seem to anticipate experience, or even to control it. Upon analysis this mystery clears away, however, and the assertion that the sum of the angles of a triangle are equal to two right angles takes its place beside the statement that the inkstand is upon the table.

Kant's effort to read logic and mathematics into nature does not conclusively account for the feeling of certainty—the real problem in the case; for our minds are themselves part of nature. Platonism affords a reality that is neither physical nor mental, and thereby gives a better basis for *a priori* knowledge. Universals are such realities. We can become acquainted with these just as we become acquainted with sense-data. The kind of knowledge is the same. It does not follow that we will form our acquaintance with triangularity as early as with redness; the power of abstraction is not concerned here. "Between universals, as between particulars, there are relations of which we may be immediately aware." When the unconditional assertion is made that 7 and 5 are 12, I am aware of such a relation between universals. And I am aware of it in the same way that I am aware that the inkstand is upon the table. We are aware of the relation; in one case it is a relation between universals, while in the other it is between particulars. This, then, is the long and short of *a priori* knowledge. It "deals exclusively with the relations between universals." It is this that gives synthetic judgments *a priori* their distinctive character.

It thus appears that "what seemed mysterious in our *a priori* knowledge is seen to have been based upon an error," the confusion of the general proposition with its application to actual particulars. And this really accounts for the difference between a genuine *a priori* judgment and an empirical generalization. When it is asserted that all men are mortal, the *meaning* of the statement is *understood*, provided the universals involved are understood. But "the difference between an *a priori* general proposition and an empirical generalization does not come in the *meaning* of the proposition; it comes in the nature of the *evidence* for it." The evidence for the belief that all men are mortal rests upon our experience with particular instances. "We do not believe it because we see a connection between the universal *man* and the universal *mortal*."

There is a solid feeling as well as a strange familiarity about this explanation of *a priori* general propositions. It carries one back to those



normal explanations sometimes advanced by students whose minds are still unacquainted with strange doctrines in philosophies. One need not accept Mr. Russell's Platonic realism as applied to the universals to thoroughly enjoy his keen analysis of Kant's synthetic judgments *a priori*. I am not, however, by any means certain that Mr. Russell would not feel obligated to exclude the rest of us. In that event, we can be charitable; for it is of the essence of Platonism to be exclusive. This would explain his inhospitality. Nevertheless I can not see why, if one refuses to be pigeonholed as nominalist or conceptualist, preferring rather to regard universals now as conventions dependent for their existence upon the subject's reaction upon reality, now as more or less accurate guesses at reality—I can not see why he should not be inclined to accept such an explanation of general propositions. Would this not be harmonious with the rest of Mr. Russell's wonderful little book?

One of the best things in the book is Mr. Russell's attitude, quite unconscious, I presume, towards the would-be sceptic among youthful philosophers. Most good students pass through the stage when they come for the first time to an examination of the presuppositions of experience, so strongly urged by Mr. Russell as the essential task of philosophy. They take up an attitude of doubt, if not of complete negation; not to do so would be stultifying. Whatever may be the value of the classic argument against the sceptic, there can be no difference of opinion about its failure to get at the difficulty of sincere students. It is good to see that this ancient weapon finds small place in an essay that is destined to become classic.

Mr. Russell's kindly attitude towards the youthful doubters is in some sense of a texture with his candid statement of the value of philosophy, which "is, in fact, to be sought largely in its very uncertainty." Thus it liberates the mind from the prejudices of common sense and the tyranny of custom. "While diminishing our feeling of certainty as to what things are, it greatly increases our knowledge as to what they may be; it removes the somewhat arrogant dogmatism of those who have never traveled into the region of liberating doubt, and it keeps alive our sense of wonder by showing familiar things in an unfamiliar aspect." Thus the true value of philosophy consists in the asking of questions rather than in the answering of them. In so doing we uncover "the strangeness and wonder lying just below the surface even in the commonest things in daily life," and thereby increase the joy of life. To quote in full his concluding words, which I account unmatched: "Philosophy is to be studied, not for the sake of any definite answers to its questions, since no definite answers can, as a rule, be known to be true, but rather for the sake of the questions themselves; because these questions enlarge our conceptions of what is possible, enrich our intellectual imagination, and diminish the dogmatic assurance which closes the mind against speculation; but above all because, through the greatness of the universe which philosophy contemplates, the mind also is rendered great, and becomes capable of that union with the universe which constitutes its highest good."

The book is written in a clear, logical style, in language free from an

outworn terminology reminiscent of other ages. There is a sparing use even of those technical terms in good standing among philosophers. The treatment is of such a character as to awaken interest and encourage inquiry. For this reason it should be especially serviceable where philosophy is a required course of study, to say nothing of the pleasure the general reader will take in it. One possessed of normal curiosity, after he has read this stimulating little book, is more than likely to find himself keenly interested in the essential problems of philosophy. But, what is better still, he will be far from unacquainted with the characteristic aspects of the great world-views, and that, too, in a manner not unsympathetic. Mr. Russell's discussion of the doctrines of those with whom he strongly disagrees is tactful as well as discerning; it should, therefore, afford an excellent point of departure. There are other features that commend themselves, not the least of which is the strong spirit of optimism with reference to the future of philosophy. This runs throughout the entire essay.

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*The Applications of Logic. A Text-book for Students.* A. T. ROBINSON.  
New York: Longmans, Green, and Company. Pp. x + 219.

Here is a book that is true to its title. In it there is not a whisper of those alleged problems of logic over which philosophers are wont to wrangle; and the cause of this happy omission doubtless lies in the circumstance that the author stands not in the haughty lineage of Sigwart, Venn, *et al.*, but is only an 'umble teacher of English in the Massachusetts Institute of Technology. This same fact also puts the little volume into that choice but painfully small band of works which materially assist their readers in thinking straight and talking straight. Professor Robinson evidently has been dealing, these ten years past, with young gentlemen who care nothing about the metaphysical status of universals, but are acutely interested in writing lucid, convincing reports of electric-lighting plants and in classifying bolts, gears, and shaft-hangers. And so he teaches, not logic, but something immeasurably more precious—the art of forming and arranging opinions.

Nearly half of his pages are filled with skilfully fashioned exercises. The student is required to take notes on readings and lectures, with an eye to seizing the logical structure of these. He is put to studying the connection between statements in his own conversation and private reflections. He is called upon to make full reports of some familiar place and to arrange his observations into classes determined by various definite purposes which a writer might have. There is also served up the usual and inevitable array of excerpts containing peculiar or faulty inferences, which the student must discover. But, unlike most collections of fallacies, this one is composed chiefly of arguments on topics in which an educated young man of to-day may be expected to take lively interest and about which he ought to have definite, if not well buttressed, convictions. The abolition of football, the honor system in examinations, and kindred college issues naturally bulk large here.

These exercises give the book its greatest value. The well-written studies to which they are appended are not remarkable. They make not the slightest pretense of originality, and they do not rest upon a clearly thought-out hypothesis of logic and mental operations. This defect, however, works little harm; for in real thinking and writing, neither teacher nor student need know anything save the particular aim of the particular line of reasoning and the subject-matter which this aim involves. Professor Robinson drives home this fact by word and by deed. He believes that genuine thinking is shaped by the thinker's purposes, and that to have a definite purpose with respect to a given subject, one must be familiar with it at least in some of its aspects. Consistently with this doctrine, the author bends his efforts, not toward schematizing the stock fallacies and explaining how Achilles really does overtake the tortoise, but toward showing the student, in concrete instances, how those two factors, purpose and knowledge, guide his pen through small talk and solemn essay alike.

The work is admirably adapted to the needs of a first course in logic or to an advanced course in composition.

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*A Method of Measuring the Development of the Intelligence of Young Children.* ALFRED BINET and TH. SIMON. Translated by CLARA HARRISON TOWN. The Courier Company. 1912. Pp. 83.

It is quite unnecessary to review the subject-matter of this monograph, since it has now been seven years since the Binet-Simon scale of tests for the measurement of children's intelligence was first published in "*L'Année Psychologique*." Many investigators and educators to whom the original articles have not been easily accessible have been awaiting a full translation of one or more of the first-hand accounts of the series of tests, the methods of applying them as recommended by their originators, and some general discussion of their intent and significance. Because of the fact that "the popularity of the tests is not paralleled by accurate knowledge" concerning them, Dr. Town has presented this translation of the 1911 article in the *Bulletin de la Société libre pour l'Etude psychologique de l'Enfant*. This is the finally revised form of the Binet-Simon scale. The manual contains a preface by the translator, a detailed description and classification of the tests, with suggestions and directions for their administration, a general discussion of the conditions necessary for satisfactory examination, and an appendix containing the series of tests arranged in convenient age and diagnostic groups. The manual will be welcomed by all who are interested in the psychology of tests.

It is much to be regretted that such a timely translation should be marred by such a profusion of orthographical, grammatical, and typographical errors of the most unpardonable sort. The most casual reader finds such words as "verticle," "presumptious," "difinition," "whch," "howver," "wheher," "using," "nameing," etc; such hyphenations as "but-cher," and "fee-ble"; many errors of alignment and spacing; and the most riotous and indiscriminate use of commas and semicolons. Of



the 52 pages of Part I, on "Description of Tests," 21 pages of the reviewer's copy of the manual contain from one to three such uncorrected errors, remarked in the course of a reading actuated by no intention of proof-reading. On the whole, however, these errors do not detract from the intelligibility of the translation, although such a statement as "A great variety of errors are made by the children" (p. 12) is more or less ambiguous.

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## NOTES AND NEWS

### SUBJECT OF DISCUSSION FOR THE NEXT MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

THE Executive Committee of the American Philosophical Association, in order to carry out the instructions of the Association with reference to the discussion at the next meeting, convened on December 28, and has since been in correspondence concerning the matters referred to it for arrangement.

The Committee early reached the decision that, in order to facilitate the selection of a subject for discussion, it should make itself the Committee on Discussion. Accordingly, in that capacity, it has selected the problem of Values for discussion at the thirteenth annual meeting of the Association. The Committee, after considerable discussion, has decided to state this problem in only the most general form and in such a way as will allow all parties to present their more specific points of view and to participate in the discussion. To this end the Committee presents:

The Problem of the Relation of Existence and Value, including their relation both as facts and as concepts, and also the Relation of a Theory of Existence to a Theory of Value.

The Committee realizes that even this brief formulation may be open to criticism, but submits it with the request that it be accepted only as a point of departure for the discussion of the various minor problems and

points of view that are involved in the general problem. With the consent of the editors of the *Philosophical Review* and of the JOURNAL OF PHILOSOPHY, the Committee now requests that either brief analyses, formulations, and discussions of the problem, or longer papers, be submitted for publication. Four members of the Committee have agreed on the appended formulation of the problem as involving the main points to be discussed and as connecting the next discussion with the principal points raised in the recent one at Columbia University. However, this formulation is published not even as a majority report, but only as one analysis out of the many which the Committee hopes will be submitted either to Professor Woodbridge or to Professor Creighton. The Committee now urgently requests a number of analyses of, and papers on, the problem selected, in order that later on the Committee may use this material as a basis for a final formulation, if this step be deemed wise.

The Committee wishes to announce that the invitations of Yale University and of the American Psychological Association have been accepted for the next meeting, which will consequently be held at New Haven on dates subsequently to be decided, though probably on December 29, 30, and 31, 1913. A joint session will be held with the Psychological Association for the purpose of discussing some topic of mutual interest.

E. G. SPAULDING,

*Secretary.*

PRINCETON UNIVERSITY.

#### THE PROBLEM OF VALUES

1. Is Value (1) something which is ultimate and which attaches itself to "things" independently of consciousness, or of an organic being with desires and aversions, or (2) is it a characteristic which a thing gets by its relation to the consciousness of an organic being, or to an organic being with desires and aversions?

2. In either case, as concerns philosophical technique, may, or may not, a theory of the nature of things be successfully developed without reference to a theory of values, and *vice versa*?

3. In both cases (under 1) what theory of relations holds for the relation (a) between values and other "things," (b) between a *theory* of values and a *theory* of the nature of other things, and how can it be shown that the specific theory of relations alleged to hold really does hold?

4. Could every position taken in 3 itself be taken only in dependence upon a prior theory of values, or upon values themselves?

5. Is there one fundamental standard of values, or are there more than one? How is the position taken here related to the positions taken with reference to Questions 1-4?

E. B. MCGILVARY,  
W. B. PITKIN,  
H. A. OVERSTREET,  
E. G. SPAULDING.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD<sup>2</sup>

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### INDIVIDUAL AND SOCIAL MINDS<sup>1</sup>

WE have generally spoken of mind in the past as though it were made up of individual streams in abstract isolation from each other, each bound up with its own organism. We have become accustomed, thanks to the sharp abstractions of science, to look upon mind as subcranial. We can not, however, in my opinion, solve this difficulty of abstract isolation by substituting for mind organic reactions as some recent writers seem to do.<sup>2</sup> Mental behavior is not mere physiological behavior; and adding the *quale* of *interested* behavior merely introduces the problem of mind through the back door. For we must still define interest. This is no mere neutral light, but an energetic reaction between the will and a stimulus. The stimulus may be physicoorganic; it may be internal to the will's own rhythm; but it may also be another will. It is the relation in the latter case with which we are here concerned.

In assuming, as psychologists have done in the past, the isolation of minds, the relations between minds have necessarily been regarded as external relations. The continuities between minds have been assumed to be physical continuities, unless in some "spooky" instances of telepathy. We become conscious of other minds, it is supposed, only through analogy from physiological conduct, *i. e.*, we represent to ourselves that other people have minds from the similarity of their bodily behavior to our own, assuming, of course, that we have knowledge of our own minds from the start.

Why this precedence should be given to physical continuities is not easy to understand from the point of view of logic, though it is natural enough from the point of view of custom. The material

<sup>1</sup> This paper was read in part before The American Philosophical Association at its recent meeting at Columbia University. It is intended as a chapter in a forthcoming volume, "A Realistic Universe."

<sup>2</sup> See R. B. Perry in a remarkably keen article "The Mind Within and the Mind Without," this JOURNAL, Vol. VI., especially pp. 172-175. Perry reduces mind to organic behavior. It is significant that Perry draws his data from the comparative psychology of the lower animals, where mind is bound up exclusively with organic behavior. He does not deal with the intersubjective relations.

world has been too much with us. Early and late, through a long survival struggle with the sense environment, we have been directly dependent upon it for our immediate wants, while conscious cooperation with our fellows and the treatment of them as anything more than things—breathing bodies—is comparatively late and not overwidespread now. In the lowest animals, mind seems entirely enslaved to the organism and its needs. Blind impulse and habit seem here indeed a part merely of organic behavior, as our neorealist friends would have us believe of mind in general. In the higher animals the free association of ideas, the division of labor, and cooperation for common ends help to liberate mind from this instrumental relation to the body until, in civilized man, the relation is reversed: Body comes to be the instrument of mind, and the individual's world of ends comes to be found more and more in social companionship, in the mutual cooperation and appreciation of his fellows. This fellow world comes to be looked upon more and more, not as a mere artificial contract, but as the fulfilment of spontaneous and fundamental needs. A world of spiritual relationships thus arises where the individual lives and moves and has his being; and compared to this the solid physical world, through the progress of science, comes to seem more and more a plastic means.

This mastery, however, is made possible only by means of abstract thought; and abstract thought, indispensable as it is to this process of liberation, carries its own penalty. It tends to make us insensible to the immediate continuities of life. It cuts the world up into abstract elements. It atomizes its integral situations for descriptive purposes, and then unconsciously substitutes the instrument for the concrete interrelations of the real world. Thus conceptual thought, the most efficient of social institutions, dulls the sense of social continuity and reduces mind to a mere abstraction. Its relation to its world becomes a mere external relation, at the same time that the objective world is broken up into abstractions with their external relations. Incidentally thought, when thus cut loose from the concrete processes, for which it is to furnish the leading, makes itself impossible and absurd. A world made up of abstractions is no longer conceivable; and so thought in despair comes to discredit itself and to seek solace in mysticism.

It is one of the paradoxes of human development that conceptual thought, the social instrument by which mind dominates matter and secures efficient cooperation of mind with mind, should thus in theory have come to isolate mind in the universe, if indeed not make it a mere function of matter. As the substantives of thought occupy the foreground of our consciousness, it has made us correspondingly neglectful of that sense of immediate companionship of mind with mind

which furnishes the propelling motive of social cooperation, including abstract thought. Not that thought has destroyed the reality of companionship. Constructive imagination does not make men selfish, as some suppose. By liberating mind from the immediate sense world, it has, on the contrary, vastly enhanced both the need and the reality of spiritual association. It has made possible the relationship of friendship, the freest and most precious of social communions, where man rises above, not merely the slavery to animal want, but the bondage to tradition as well, and where soul meets soul on the basis of lasting ideal kinship. In practise, therefore, thought has well fulfilled its function as an instrument of the social mind, even though in theory it has resulted in social atomism. This defect, however, can be cured by thought itself when it recognizes its instrumental character and examines its deeper, though often subconscious, motives.

Perhaps Bergson is right that the higher insects with their concrete intuitive life and their lack of abstract thought are more keenly conscious of the real continuities than we. But at any rate they don't know it if they are, while we can with an effort at least call back thought to its original task of making clear and distinct our concrete intuitions.

We are thus, in the process of experience, literally differentiated out of a social continuum. In this process of differentiation, in this growing recognition of each other's reality, the combative instincts play the important rôle. We are no sooner brought together by the irresistible pull of the social tendencies—the instinct of gregariousness and the instincts bound up with sex, together with the more general tendencies of imitation and sympathy—than we, like children, fight to possess the same things. Perhaps we fight for physical things, perhaps for the mastery of the social situation, perhaps to emulate each other in a self-imposed task. And in the fight we discover the mutual reality of wills and our relative place in the scale of valuation. In the meantime the sense of companionship which pulls us together and holds us together in spite of the conflict, and even makes us enjoy the conflict, is in the background of consciousness and is apt to be overlooked by the intellectual attention. It may seem as though we were just together to fight, to be the interference and the torment of each other. We fail to realize that war itself, however destructive, and however clumsy and primitive a method of social evaluation, is a social process which “makes some gods, some men.”

In brief, we may say that while at the start, both in race history and in individual history, the particular will is a rather blind function of an individual organism, in the growing civilized life of which we are a part the particular mind becomes rather a function of a so-



cial organization of mind, with its necessary division of labor and free or compulsory cooperation. In this spiritual economy of the world we are literally members one of another.

If we succeed in recovering to some extent the innocence of that immediate experience from which all our abstractions are made, we shall find, I think, that the isolation of mind from mind is based in prejudice, not in the intuited facts. The processes of external representation and analogical inference presuppose immediate social *acquaintance*, valuable though they are in our attempts to *know about* other minds. We do not start with a knowledge of our own minds and then eject it into other bodies, but we become conscious of being minds through our interaction with other minds. It is in meeting the other will, which thwarts and baffles it, that our own will awakes to its reality and claims. Except for this social interaction, this intersubjective tension, it would remain submerged in the physical continuities, a mere function of organic conduct as we find it to be in the non-social animals. Our knowledge of social continuities starts, like all knowledge of reality, with certain intuited facts. The intersubjective continuities are first of all *felt*, and they are felt to be different from physical continuities. This fact is more elementary than the representation or inference of other minds; and is presupposed by these intellectual processes. It is because we *feel* the continuities with other minds and must adjust ourselves to them that we try to know about them. Our intuition of *social* continuities is as immediate and elementary a fact as that of physical continuities; and from the point of view of knowledge, it is the demands of the social interactions which lead us to *distinguish* between intersubjective and physical continuities. We could not, therefore, very well infer the former from the latter.

The agnostic is at any rate consistently wrong. He does not hold that we have a true intuition of physical continuities, but are isolated as minds. He regards both continuities as subjective states. We thus live in a sort of middle world of phantasms (to use Hobbes's term)—a world neither mind nor body nor a copy of either, but a misrepresentation of both. Hence we can know no real things, we can trust no intuitions as regards either world. The pragmatic point of view,<sup>3</sup> on the other hand, insists that we must start with our immediate intuitions and beliefs and try to make them consistent and clear. And one of those intuitions is that of the first-hand and immediate character of social companionship. This for the mind, unspoiled by artificial abstraction, is as categorically convincing a fact as the immediate sense-continuities.

<sup>3</sup> My own conception of the pragmatic point of view I have tied to state in "Truth and Reality," Macmillan, 1911.

What is there to set over against this convincing intuition of social continuities? There is an abstract body of secondary beliefs. We still insist upon applying the molecular conception of interaction to the relation of mind to body. To the old type interactionist, it means that mind must somehow be located within the brain and give a push to its molecules. To the parallelist such interaction is inconceivable and absurd; and the only relation possible is that of inert concomitance and miraculous correspondence, while the materialist caps the climax by ruling out mind altogether except as the bare abstraction of a neutral consciousness.

The mechanical theory has long presented a similar difficulty as to physical interaction. This difficulty led Leibniz to deny any interaction between monads. It led physical science to discard the so-called secondary qualities, because, in their case, the characteristic action of the physical stimuli was supposed to stop with the end-organs. Just how the primary qualities got past was not explained, but merely taken for granted; and the agnostics and subjectivists, who were more consistent, had no trouble in insulating mind from any outer physical world. Such was the logic of the old mechanical hypothesis.

Fortunately we have come to know a type of energy which is not ponderable matter. The immaterial character of electricity was long obscured by our carrying over our mechanical models into the new field. The ether was invented with all sorts of contradictory properties to furnish a medium for this new energy. But whatever may be our belief as regards the existence of the ether, we have at any rate come to recognize that in electrical energy, in its various forms, we have a unique type of immaterial continuity which intersects and pervades the gross material framework in all sorts of ways. What is opaque to one wave-length becomes translucent to another—to X-rays or violet rays. However difficult it is to accustom our minds to the properties of this immaterial energy, we have here a type of continuity of far greater subtlety than known before—a type where molecular models cease to be applicable. As the discovery of free electricity has liberated the conception of this energy from matter, it is to be hoped that the conception of mind may also be liberated from the hypothetical models which have made our immediate convictions in the continuities of mind with the physical world and with other minds absurd.

As electrical energy *rides on* material energy and is thus focalized in definite directions, while yet establishing its own unique terminal continuities, so we may conceive that mental energy rides on electrical energy and yet establishes its own immediately intuited continuities. Within our own body the mental energy seems to

travel on the electrical energy of the nervous system. And why not on the electro-magnetic field and on the material vehicles with which our nervous system is continuous? When we send a voice over an electric wire, don't we also send the mental impulse which gives character and persuasiveness to that voice and makes a will at the other end respond to it in a definite way? Are we certain that the will to send the voice stays in the brain? That we believe so is due, I believe, to an artificial tradition.

I do not care to go on indefinitely and work out possible analogies between mental energy and electrical. They will easily suggest themselves and may easily be overworked. We have no more right to transfer the electrical conceptions bodily to the mental realm than we have to transfer the material conceptions to the electrical realm. What I wish to emphasize is that the conception of electrical fields of energy and their immaterial continuities across space, intersecting our gross material world, seems to furnish a model which fits in with our conviction in the immediate acquaintance of mind with mind. Let us substitute for the old conception of the soul as being an indivisible, localized atom, the conception of a field of energy with its vague penumbral edges or spreadings and its more or less focalized and shifting center of activity, and we shall have no intellectual obstacle to dealing with our social intuitions.

Such a conception conveys no new information. This must be gotten from experience as before and always. It does not support a telepathic hypothesis except as social experience indicates such an hypothesis. Our social continuities become no less mediated by a nervous system, end-organs and an intervening physical world, whatever its constitution may be, than before. It simply insists that mental energy rides across and over these other energies and establishes real overlappings, true continuities in its own right and kind. Whether more direct and free continuities across intervening space than those so mediated are possible under conditions of high intensity and the special receptivity of the polar fields must be established by evidence; but if so established no intellectual model need discredit them; and we must admit that there is being accumulated a number of uncanny instances that may point to a telepathy of this more special kind.

When once we abandon the dogma of the insulation of mind somewhere in the skull, there are many interesting phenomena about human relations that may throw light on the activity of this mental energy. Just exactly what is it that makes people attractive or repellant to each other and sometimes the opposite to different people and to the same people at different times? What is it that constitutes the "atmosphere" of some personalities and the absence of it



in others, or that gives some a positive, others a negative "atmosphere"? What is it that makes some psychically warm, others cold, and others colorless? Why do some people move us and others not, though the latter may have the better argument and the better cause? What takes place when we find a person animated in conversation? What constitutes the *rapprochement* between the speaker and his audience? These are just a few of the questions of every-day social life which we shall be able to understand better when we are ready to accept the intuition of immediate experience that the will is an energy which radiates beyond any definite center; that when we meet in sympathy two fields of will actually blend; and, *vice versa*, that they repel each other when we are antagonistic. Thus love and hate become real first-hand interactions of wills.

Language, gestures, and other sense symbols are merely the code for controlling or *canalizing* (to use Bergson's term) the intellectual associations and thus making definite the *meaning* of mental continuities. They do not constitute the continuities. Common moods and conative attitudes are possible without such symbols; but without them we can not be sure of the similarity of the associative trains of ideas and images that go with the attitudes. As these are bound up with the brain and are primarily physical, the direct communication of them becomes more difficult. Strangely enough it is the physical aspect of experience which particularizes or furnishes the hidden and only indirectly accessible factor in social communication. Music succeeds in producing common emotions and attitudes, but the intellectual associations vary greatly with different listeners. It is the former that furnish the directly intuited character of intersubjective continuities. It is reported that Carlyle and Tennyson would often visit together for a long time without either saying a word. Then Carlyle would get up and take his hat and say: "That was a good visit, Alfred." Silent communion of soul with soul may give us the strongest sense of companionship.

We have seen that we must recognize two types of continuity, material and immaterial. These two types may occupy the same space, the immaterial intersecting, riding over, and bridging the material in various ways. In a scientific way we have come to know one type of immaterial continuity with great definiteness, that of electricity. The other type of immaterial continuity, viz., the mental type of intersubjective communion, human beings have been acquainted with and convinced of since the beginning of social relations, but our knowledge of it is fragmentary. This is probably in part due to our scientific prejudice. In no case of spatial continuity, can we follow it point for point. We must piece out our percepts by means of our concepts in any *knowledge* of continuity. But we *make*

our concepts in any case to describe the intuited results. If we can understand these results only by assuming energetic confluence, i. e., if somehow two energies must contribute directly to the new unity, then we have a right to believe that the continuity exists.

In a physical compound such as  $H_2O$  we know that there must be action of the chemical energies upon each other, because the result is not the mere external addition of the properties of the two elements as we know them in other contexts. The compound, water, is a new individual with distinct properties of its own. The relations are in part at least internal relations, affecting the nature of each element contributing. What is true in the physical compound is true in the social compound. The will of the group, swayed by a common motive and common emotion, is not an external addition of the traits of the particular individuals, as taken either in psychological isolation or in other social compounds. The specific group mind has properties of its own which involve fusion of the various individuals into a new result, as the tones fuse in the chord. The various individuals feel a different degree of convincingness, of power, of suggestibility as regards the dominant impulse, because they are part of the social situation. A new energetic field has been established, a new individual has arisen with distinct characteristics. There is somehow a real overlapping—an immediate inhibition or reinforcement of wills, peculiar to the unique social situation. The relation here as in chemical compounds affects the natures of the terms and is not merely an external relation between abstract entities. If we must thus take the result, then the continuity must be real. Will must somehow act upon will within a common energetic field to produce individual unity. Instead of speaking of *sympathetic induction* as an elementary relation between minds, we ought rather to speak of *sympathetic conduction*. Here we have the real dynamics of social "contagion."

In the overlapping of mental fields, it is not necessary that the impulse of each should travel to all. The living continuity may be an overlapping from next to next, like the intersection of circles, or as the sea is continuous from shore to shore though each wave gives up its impulse to the next. Beside these next-to-next continuities there are also the more distantly mediated continuities across space. The telephone and telegraph carry mind—actual mind—and "intelligence" over great distances and past numerous by-stations, establishing mental unities irrespective of proximity. My unity is with the person at the other end of the 1,000-mile telephone connection, rather than with the person outside the booth. There is bound to be, therefore, considerable diversity of opinions and sentiments in complex wholes such as a nation. But with it there must be implied,

at least subconsciously, a sense of common direction. This is focalized ordinarily by the consciousness of a common tradition and a common group name. In times of stress—a case of national danger or of family honor—this consciousness becomes intensified into active loyalty to a common ideal.

It is through the variety of social situations that the self comes to know its own characteristics. No man liveth unto himself; we live only in situations. And the most important situations for knowing ourselves are these common reactions, when we feel each others' tension, conflict, and sympathy. We exist in constellations, whose mutual attraction or repulsion we feel, rather than as individuals. The particular self is a later distinction, made possible largely because of the variety and the complexity of social situations into which civilized man enters as compared with tribal man. This, with his abstract name, enables himself and others to dissociate him from particular contexts and to regard him as an independent personality. But even this abstraction is a social function and is rather a discrimination of a group of certain constant traits within a variety of situations than an independent existence, which would mean nothing.

Not only is the social field of mind *intuited* as having its own unique traits as an individual, but it must be so dealt with in our *practical relations*. It commands our loyalty or antagonism as an individual. This is very different from the loyalty or antagonism which we show toward particular components. It may even be the direct opposite. We may love the particular person and yet hate his nation, or *vice versa*. This loyalty or antagonism to the group is not an attitude to a mere collection of particular persons, but to a solidarity or unity that includes them and in a measure makes them what they are. In savage life where persons are not abstracted from the group, no difference is made in the treatment of the isolated person and the group. The religious command to the ancient Hebrews was to exterminate indiscriminately the members of another nation. These were not conceived as having potential relations as possible members of the conquering group. The more common custom among primitive nations was to preserve the conquered as slaves of the conquerors. This, however, was a merely instrumental and external relation. In the case of the subordinate unity, the family, the individual member was not, any more than in the nation, conceived as a potential member of other families. Even after marriage he remained a part of the family of the patriarch, and subordinate to it. It is in the *complexity* of the potential relationships of civilized life that the individual comes to stand out as having a dignity and independence apart from any one complex.



In studying the nature of the social mind, we must proceed empirically, as we do in the case of the particular mind. In the case of the social mind, as in the case of the particular, we can study the subject-object relation, the unity, the identity, the worth, and the immortality of the individual concerned. As regards the *subject-object relation*, there is in the case of the social mind, the dominant, selective will, and there is the object aimed at. While there is a many-headed focus of the social consciousness, the real subject, which evaluates and decides, is not the particular individual, but the field of common tendency and emotion. It is the group-will which decides through the particular person. This will selects differently—emphasizes different values, has different inhibitions and releases, from the individual will. It may select to sacrifice, when the individual would conserve; it may even disregard the individual's claims altogether. The individual can say: I live, yet not I, but the common will which lives in me.

The leader is no exception to this. He is the function of the group, swayed by its common interest and in turn swaying it by his affirmation. The leader and the led are part of the same social situation—victims of the same illusions, subject to the same exaggerations, fascinated by the same ideals. Only because the leader and the led are controlled by the same values can the relation exist. There could have been no Napoleonic age of sacrifice and devastation, if the people had not shared with their leader the false dreams of military glory and of bloody conquest. They were alike victims of the illusions of the age. The leader may grasp the situation more clearly than the rest; he may divine what the others want; but in the end he only leads because he symbolizes the ambition and ideals of the led.

In this social situation, the intellect plays its due rôle, as it does in individual life. The object aimed at calls up the appropriate associations or means for its realization; and the movements and ideas spread from one to another by imitation—all in obedience to the internal contagion and the dominance of a common impulse. Here as in the economy of the individual consciousness, the intellectual factor rises or sinks in prominence with the complexity and novelty of the task to be performed. Where there is ease and fluency of ideal coordination, the social mind, as does the particular, enjoys a sense of freedom. While in the chance-crowd and the mob, habit and spontaneous association are sufficient to satisfy the simple impulse, and the action is, therefore, mechanical, in difficult situations deliberative judgment may be called for in order to adapt

means to ends. But in either case it is the group will which is the subject, controlling the train of ideas of the various brains involved. It is a common mind tapping the resources of the individual centers.

Since this common mind is known through the intuited and practical differences to the fields which overlap, we have nothing to do with the supposed mystery of a *transcendental consciousness* over and above individual consciousness. The cognitive function, so far as we can see, must still go on in connection with the individual brains with their images and associations. What is important to the conception of a social subject is that these individual intellects, with their conscious focus, are all owned and controlled by the common field of tendency which uses them as instruments for its own end.<sup>4</sup>

In the group mind, too, there is the consciousness of *identity* from moment to moment—the persistence of the impulse or ideal to be realized. This, as in the case of the mob, may be a mere momentary impulse, due to the predominance of a certain primitive instinct for the time being, such as fear or anger. But it may also be a more complex and permanent tendency, involving ideal organization. The will of a nation may persist generation after generation, while individuals come and go. Through the internal changes and external vicissitudes of ages, there is still something distinct and characteristic about British mind as contrasted with French. It is a mistake to identify the social mind with the mob merely and its evanescent existence. Its identity must be judged, as we judge individual identity, by the common drift of tendencies, by the persistent traits, which overlap the various moments of its existence. This is never abstract identity, any more than it is in the case of the particular self, but the persistence of a direction of will within an ever-changing historic process.

As regards the *type of unity* which dominates social minds, here again we find the same variety as in particular minds. The unity may be largely external—the imitation and veneration of common customs and traditions—or it may be a thoroughgoing unity of common ethical ideals and the recognition of common claims and responsibilities. Only in the highest stages of development is the latter type of unity dominant. With the group mind, again, as with the particular mind, it is only through some great crisis that it discovers what it really means, that its dominant tendency rises to a conscious purpose and that conscious loyalty to such an ideal becomes a guiding emotion in its conduct. In the absence of such crises, the ideal is implicit and life becomes routine, guided largely by the external associations of custom.

<sup>4</sup> Contrast with this view the subjective standpoint of Dr. Marshall, "Consciousness" (Macmillan), pp. 173 ff.

As regard the *worth* of social minds, this as in the case of particular minds, must be determined by the dominant ideal. Does it leading furnish the largest harmony and realization of the particular factors involved? Does it produce proper control of the primitive by the ideal, and yet give the primitive its due? Does it play the whole scale of values possible to human nature? Does it furnish the fullest possibility of development for the future? Then it has realized the maximum of worth. If, on the other hand, the common direction of tendency is produced merely by the intersection of a certain level of human nature to the inhibition and neglect of others, more particularly if this level be that of the primitive tendencies of impulsive satisfaction, then the social mind, as the particular, becomes immoral.

Finally, as regards the immortality of social minds, they will survive as individuals will survive, if they are recognized as furnishing permanent leading in the growing process of history. Here as a matter of fact the immortality of the individual and that of his group are inseparable. The immortality of the Greek mind will survive while the minds of Homer and Plato survive. In them lives the genius of the Greeks, even as they live in its atmosphere and give articulate meaning to its tendencies. The merest fragment of a Greek artist is alive with the Greek mind. Neither individual nor social will depends upon physiological vehicles, once it has created for itself a spiritual body of art, science, and institutions. In these lives the real will, the real purpose of a people. Connect with this spiritual field of energy, and you feel the influx of its blood, with new capacities for growth and appreciation. Whenever history has connected vitally with the Greek mind or Hebrew mind, it has meant a new epoch of life and inspiration—a new impulse towards science and art, or a new heightening of the moral level of the times. And minds which can thus energize and transform mankind are not dead, though for a time they may be disconnected from history. In the unified self of human development, they continue their full significance and life. And if there is an overarching spiritual communion, greater than humanity, enveloping and conserving spiritual values, these social minds, we may believe, have a unique individual immortality within it, proportionate to their permanent significance.

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## "FLUCTUATIONS OF ATTENTION" AND THE REFRACTORY PERIOD

IN an interesting and suggestive article published some two years ago<sup>1</sup> Professor Wallin suggested that it seemed possible to connect the fluctuations of attention as observed in reversible perspective and in observations of minimal stimuli with the refractory period of the reflex as it has been developed by modern physiologists, particularly by Sherrington. The obvious difficulty in the way of relating the two phenomena lies in their difference in duration. The intermittences in attention usually mentioned, reported by Lehmann, Marbe, Urbantschisch, and others, come every three to ten seconds or more, while the refractory period lasts only from one tenth of a second to a second at the maximum. During some years past Mr. Billings and Mr. Work have been studying in my laboratory and under my direction another periodic fluctuation that corresponds more closely to the period of the refractory phase of the reflex and which has several characteristics that make plausible the assertion that it is the sensory correlate of the refractory period of the reflex.

The phenomenon first attracted my attention in connection with recording the ordinary so-called attention waves. I noticed that frequently I would be uncertain just at what time the gray ring on the Masson ring had disappeared. I would seem to be distracted at the moment that I desired to notice it most. I would see that it had vanished, but could not see it go. This suggested that the most careful observation was not continuous, and that there was another periodic alternation of attention that was shorter than the usual attention wave, and superimposed upon it. Acting upon this suggestion Mr. Work began to experiment with several persons to determine whether such an intermittence of sensation was common, what its length might be, and to determine how it might be influenced by different conditions. When he was compelled to discontinue his work, Mr. Billings took it up and extended it. He will soon publish his results in detail.

The method of attack was perfectly simple and direct. A dot was placed before the subject and he was asked to press upon a key during the period when he was occupied with the dot, to lift his finger when he was distracted by anything whatever. Each subject worked with was found to give evidence of the fluctuation, and for all the different sorts of material investigated. Dots, parts of pictures, tones, and pressures were used as stimuli and all were found to be intermittent. There was always some difficulty in keeping the records since the observer often forgot to notice that he was not conscious of the stimulus in his interest in the distracting stimulus or event. It is

<sup>1</sup> This JOURNAL, Vol. VII., page 33.

the one instance in my knowledge in which the observation of the conscious process really interferes with the conscious process, as the older theoretical objections to introspection assumed that it must. Here interest in the mental process interfered with recording the changes rather than *vice versa*. The observer would remember after attention had wandered to several other things that it had wandered and would then lift his finger. He would be conscious that several things had been attended to, but could record the whole series only as continued attention to the stimulus. This source of error in the measurements was always present and tends to make all values given for the time of attention to an object too large.

Another difficulty that was much in evidence early in the observations was that it was hard to distinguish between assurance that the dot had not vanished objectively and its continuous presence as a conscious process. One might be certain that the dot were still present all the time, but not have observed it continuously. In this respect these alternations are different from the "attention wave" in the classical use of the term. Those can frequently be seen to vanish or seen to reappear. These can only be recorded in retrospect as an awareness that one was not looking just before. As soon as the observer becomes conscious that he is not looking his attention is at once attracted to the object, and it again enters consciousness. It is hard for the inexperienced observer to believe that the object has not been in consciousness all the time, since he is certain that the stimulus has been acting continuously. It is this "stimulus error" undoubtedly that has prevented the phenomenon from being observed earlier. The practical certainty that an object persists obscures the intermittence of its image. Another difference between the older recognized "attention waves" and these is that in the former the fluctuations are confined to stimuli of liminal intensity while these affect all stimuli, whatever their intensity. This difference contributes in some degree to the difficulty mentioned above of discriminating between objective persistence and subjective intermittence.

The general results showed that all of the individuals could with a little practise observe the fluctuations and record them. Occasionally at first they would be sceptical about their existence or their ability to register them, but a few minutes' training would bring them out and a few hours would serve to give sufficient training to produce satisfactory records. The times varied somewhat for different subjects and for the same subjects, in the different series. The range for most was from 0.2 second to 6 seconds. The average for the different subjects ranged from about 1.0 second or a little under to 2 seconds. The average is probably too high for two reasons. The

first is due to the frequency with which disappearances are overlooked through interest in the distracting stimulus or process. Even in the most successful series these were large in number. The second depends upon the fact that each fluctuation recorded really involves two acts, one the turning to the distraction, the other the recognition that distraction had taken place. To obtain the length of each single mental wave it would be necessary to divide by two for this correction, and that would still leave the averages too large for the length of the longest period that one can attend. If we compare these reduced values we would find that the periods of attention would be of approximately the same length as the reflex and its refractory period, from .1 to 1.0 second as noted in the beginning of the article. It should be added that this time could not be changed by voluntary effort. The wave was of the same length when a strong effort was made to hold the attention to the one object as when consciousness was permitted to follow its natural course. One of the few factors that showed any effect upon the length of attention was increasing the size or complexity of the object attended to. This seemed to lengthen the period, as might be expected, since the large object would permit many different phases or parts to come under observation successively. This was not to be ascribed to the lengthening of the separate impulses, but merely to the fact that the changes do not necessarily bring new objects into consciousness. As the experiments involved in all some twenty thousand observations, it would seem that considerable weight must be given to the conclusion.

We may conjecture from these observations that just as motor discharges are strictly limited in the rate at which they may repeat themselves by the fact that the discharge of the nervous impulse is intermittent or rhythmical and that each discharge is followed by a period of incapacity, the appreciation of objects through the senses is similarly intermittent, that consciousness is made up of pulses that can not last more than a second or so. The apparent continuity of a conscious state is due to the rapidity with which these pulses succeed each other and to the fact that it is assumed that objects are present persistently between the pulses. This is probably also due in part to the fact that objective change will invariably attract attention to the object from the distracting stimulus. When attention has not thus been forcibly attracted it is assumed that the object has been persistently present, and this is mistaken for continuous observation. These pulses come every 0.2 second or so, are fairly constant for all conditions, can not be influenced by voluntary effort or desire and affect all external impressions. It follows, if these results be accepted, that all consciousness or at least all observation of external events is intermittent. What is in effect continuous observation is made up of a number of



rapidly following views that are interpreted to be persistent and uninterrupted. As one can hold the hand fairly steady in spite of the fact that the impulses that keep the muscles contracted are intermittent, so the perception of an object, or of a small part of the object, seems continuous in spite of the fact that the observation of no single phase of it can last more than a fraction of a second.

A study of the order and duration of the distracting stimuli indicates that this constant coming and going of consciousness holds for ideas as well as for sensations. In several series of experiments, the observer was asked to press a key whenever the distracting stimulus altered as well as when the object observed disappeared, and then was asked to make a list of the distracting events in order. This showed that memories were quite as often the distracting event as external things. It was found, as would be expected from older work on association, that these succeeded each other at about the same rate as the external sensations and had on the whole about the same laws and conditions. The general statement may be extended then to say that the entire stream of consciousness is made up of a number of small jets that change their character from once to several times a second. That these jets may be of external or subjective origin, and whatever their origin they are pieced together to constitute the series of experiences. The continuity of the stream comes from the use that is made of it rather than from its essential character, if these may be distinguished. The times of association, like the time of perception or the minimum of attention, might then be related to the time of discharge and recovery of the cortical cells.

It might be noted also that this time is within the range of several of the times that have a psychological importance and which at different times and by several authors have been referred to the older longer "attention waves" in spite of the fact that there was a marked difference in the length of the two times or processes. Thus the indifference time for estimations of time intervals is given between 0.5 and 0.75 second, which is about the time that it would be possible to keep a single tone in consciousness without change. The displacement of one of two stimuli by attention in the complication experiment may be nearly as large as half of our shortest period. Wundt early offered the periodic character of consciousness as an explanation for this. But the then known fluctuations were altogether too long. Our periods are still pretty long, but if it is assumed that the displacement represents the time between the peaks of two alternating series of impressions, they might be brought into somewhat close connection. Just beyond the outer limit of our range stands the most satisfactory period of preparation for a reaction. If a signal is given from one to two seconds before the stimulus it is found that the reac-

tion is shortest. This again may be related to the time that must elapse between one apex of attention and the next. One might also suggest that the specious present was limited by the time that a simple sensation could receive attention or persist in consciousness. This seems, however, to be limited, by the memory after-image, which in turn evidently lasts through a number of these shortest alternations, rather than by the single pulse of response. It should of course be said that it is hardly probable that all of the other times should prove to be ultimately connected with this period of maximum duration of a simple conscious experience, but it is at least significant that the time required for association, the indifference point for the comparison of intervals, the most favorable time of preparation for a reaction, should lie within the limits that our observers gave as the minimum time between successive appreciations of a simple object, and this also corresponds fairly closely to refractory period of the reflex. How they may all be related is not always clear, but each has been regarded as connected with the old "attention wave" by one or more authorities, in spite of the difference between these absolute durations. We may leave the more detailed discussion of this point to others. Our purpose is fulfilled when it is seen that the length of attention waves as observed corresponds with the times of other processes that have been or may be connected with them.

A secondary question arises as to the relation of these fluctuations to the longer and earlier described "attention waves." It seems probable that the two are of altogether different nature and origin. The times do not at all overlap. They differ, too, in that in these short pulses the object is always appreciated as in consciousness if one definitely looks for it, while the minimal stimulus that fluctuates in the longer waves is out of consciousness and can not be brought back by attending. Again these short alternations affect stimuli of all intensities, are not confined, as are the others, to faint stimuli. That they are different seems clear from the fact that the shorter may be a hindrance to the appreciation of the longer waves. These three considerations suffice to mark the two sets of fluctuations as of fundamentally different character and probably of different origin. The longer waves may be related to the long circulatory waves as I and several of the workers in my laboratory among others found evidence for, or they may be related to fatigue processes in the sense organ as Ferree thought. These new shorter ones are more directly connected with the ultimate perceiving process and from their times as indicated above seem related to the latent period and period of recovery of the sensory neurones concerned in consciousness.

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## DISCUSSION

## "EVERYBODY'S WORLD" AND THE WILL TO BELIEVE

A READING of Professor Fullerton's recent volume, "The World We Live In," has left me in some doubt as to the relation between the doctrines of the new realism and the will to believe which I should like to record. In all of the chapters of this fascinating book except the last, we are again and again bidden to come back to "Everybody's World," which is the world both of common sense and of science, and to distrust any prophet whatever "who would transfigure the system of things, given in our common experience."<sup>1</sup> To be sure, "Everybody's World" is only a world of phenomena, but this means that we *have* a world which *does* appear to us. And this world is the only world which a sensible person will concern himself with. From the point of view of the new realism "we are relieved of the burden of a hopeless search for a reality wholly different in nature from the homely realities with which we are brought face to face every day."<sup>2</sup> We are at the very heart of things, or as much so as it is conceivable that we should be."<sup>3</sup> It is, once more, a "world which we already know pretty well, and to which we are, perforce, more or less adjusted. Our task seems to be to see somewhat more clearly and in better perspective what we have already seen imperfectly, and to make our adjustment a more reasoned one."<sup>4</sup> And of course it is science which alone will give us further information about "Everybody's World," and so permit of our better adjustment to it. The philosopher may attempt to see more of "Everybody's World" than is ordinarily seen either in common life or in science, but he must not expect to see anything which would in any way whatever "transform the world before our eyes."

So far well and good, and if Professor Fullerton had closed his discussion with this injunction to take "Everybody's World" just as "common life and science," find it and adjust ourselves to it and it alone, then there would be nothing to discuss except the soundness of Professor Fullerton's defense of such a realism,—and to remind the reader that in such a "world of sober earnest" one had better not entertain any illusory hopes about the survival or triumph of any human interests whatever. The reader might then have been referred to the last paragraph of Mr. Russell's "The Free Man's Worship" for information and solace with respect to the appropriate attitude in the presence of "Everybody's World" of common life

<sup>1</sup> Page 165.

<sup>2</sup> Page 164.

<sup>3</sup> Page 255.

<sup>4</sup> Pages 163-4.



and of science. He would, of course, also be warned not to let any dissatisfaction with the inevitable fate of all human interests at the hands of Everybody's World of common life and science impugn in the slightest the finality and ultimateness of just that world. For precisely this is the one sure outcome of philosophy.

With how much surprise, then, does one discover that in the final chapter of Professor Fullerton's book it is implied that as a man, if not as a philosopher, one might well have *some* respect for the will to believe (how much is not precisely specified). For, the "Will to Believe is a social phenomenon," and "both in Everybody's World and in the World of the Scholar, there are dim distances, shadowy outlines, subdued and faintly apprehended radiances, which give soul to the picture."<sup>5</sup> There are even in Everybody's World "historic faiths which claim the allegiance of whole nations . . . weighted with the authority of a rich past . . . which draw man close to man in a common hope"<sup>6</sup> . . . which seem to embody a Life, contact with which has been prized by countless multitudes, and in approaching which man has sought and found consolation."<sup>7</sup> Besides "adjusting ourselves to what is definitely known of reality" (which is the only sound injunction for realism to give), we are also, it seems, "to face life bravely, giving play to hope and confidence in the Heart of the World."<sup>8</sup> But was not the entire criticism of all the false separations of appearance and reality, of the failures and absurdities of idealism above all based on the thesis that the world *hasn't* any "Heart," any not-immediately-to-be-experienced reality in the only sense in which I for one can understand the above injunction to have confidence in the "Heart of the World,"—and, too, the only sense in which it has been understood in the historic faiths in which the will to believe has found expression. Were we not assured that in the world of common life and of science, in "Everybody's World," we are *already* "at the very heart of things, or as much so as it is conceivable that we should be"?<sup>9</sup> What need or excuse for any hope or confidence in the "Heart of the World" if in Everybody's World we are already "at the very heart of things as much as we can be"? Or does Professor Fullerton intend to suggest that hope and confidence may legitimately be directed toward a future of the phenomenal world (which, we are assured, *is* the real world) in which human interests and values will be conserved? But even more than any confidence in the "Heart of the World" is such confidence in

<sup>5</sup> Page 272.

<sup>6</sup> Cf. the following from Russell's essay, page 69: "United with his fellow-men by the strongest of all ties, the tie of a common doom, . . ."

<sup>7</sup> Page 268.

<sup>8</sup> Page 273.

<sup>9</sup> Page 255.

the future of the phenomenal order wholly baseless *if* we accept as literally final about the world everything of which science and common sense assure us. Of course, in Everybody's World, as filled out by science, there are some empirical values whose existence and temporal stability one may legitimately hope for and believe in,—but within very definite limits. But does any one really suppose that it is *this* confidence, *this* faith, which is concerned in that will to believe expressed by the historic faiths “rich in the associations which feed helpful emotions, . . . which seem to embody a Life, contact with which has been prized by countless multitudes?”<sup>10</sup>

Let us indeed be quite clear as to where we stand. If philosophy calls us back to Everybody's World of common life and science, and makes no attempt to interpret Everybody's World in any deeper or different way from that in which “everybody” interprets it, then let not philosophy, in a postscript, pretend to give us any confidence in the will to believe of the historic faiths. But if philosophy does commend a will to believe as something other than a mere deference to social tradition, then let philosophy ask what kind of a world Everybody's World would have to be in order that any such confidence might be other than a survival or a superstition. Perhaps an asking of this question would have led Professor Fullerton to a somewhat different account of some of the philosophies which have tried to see Everybody's World as a world in which men not only *do* “cherish hopes and ideals which seem not of our commonplace every-day world,”<sup>11</sup> but a world in which this occurrence itself finds some justification.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Sexual Life of the Child.* Dr. ALBERT MOLL. Translated by Dr. Eden Paul. London: Allen and Company. Pp. 339 + 15.

Ever since Freud, some fifteen years ago, began to publish his observations and conclusions showing that the sexual life of the child not only existed, as had previously been denied, but was of an unexpected richness, interest in the subject has been gradually increasing, and its importance for both pedagogy and psychopathology has become more and more realized. Moll attempts here to give expression to this general interest by devoting to the subject a volume of considerable dimensions.

The chapter-headings will give some notion of the ground covered: I. Introductory and Historical. II. The Sexual Organs—The Sexual

<sup>10</sup> Page 268.

<sup>11</sup> Page 268.

Impulse. III. Sexual Differentiation in Childhood. IV. Symptomatology. V. Pathology. VI. Etiology and Diagnosis. VII. Importance of the Sexual Life of the Child. VIII. The Child as an Object of Sexual Practices. IX. Sexual Education.

Moll points out that in the past too much attention has been paid the childhood sexual life of perverts to the neglect of that of the normal, and combats, with right, the resulting conclusion that sexual manifestations in childhood are a sign of morbid development; he compromises, however, at the age of seven, holding quite arbitrarily that before this time "the occurrence of manifestations of the sexual impulse must arouse suspicions of the existence of a congenital morbid predisposition." He admits that voluptuous sensations may occur in the normal before this period, but would not call them sexual (though after the age of seven he would). The mutual examination and exhibition of genital organs he thinks is dictated by curiosity, not by the sexual instinct, though the same acts later on are of course sexual. Nevertheless he fully admits the general importance of the subject: "When we consider the enormous importance and great frequency of the sexual processes of the child, we are positively astounded at the manner in which this department of knowledge has been ignored by those who have written on the science and art of education, and by those psychologists who have occupied themselves in the study of the mind of the child."

Since Freud is the only author who has proffered a theory of sexual evolution in the individual, and it is he who has brought the childhood period to the foreground of interest in this respect, one naturally anticipates that in a book devoted to this subject Freud's conclusions will receive due consideration, or at least that they will be properly described. In this anticipation the book disappoints us, for Freud is referred to only quite incidentally and his views are nowhere discussed; indeed the author allows himself to make the remarkable statement that "Freud has not systematically studied the individual manifestations of the sexual life of the child." A few of his isolated conclusions are casually quoted, only to be met with a flat denial of their validity, the author not finding it necessary to give any reasons or bring forward any evidence for his opinion. His pointed endeavor to depreciate Freud sometimes carries him to unintended extremes, of which the following is an example: In discussing the subject of non-genital erogenous zones (page 91) he speaks of the anal region and then adds, "Other erogenous zones are also at times found in children, but not often," evidently forgetting the lips, which surely is the least unequivocal of these zones in every human being. He deals with Freud's view that repressed sexuality is the cause of morbid anxiety merely by discussing whether anxiety can lead to sexual excitation. The personal feeling constantly interpolated on the subject of Freud's work greatly detracts from the scientific value of the book.

Some, though only a part of, his divergence from Freud is due to the different conceptions of sexuality held by the two writers. Whereas Freud attempts genetically to trace adult sexual manifestations to their



earliest origins in the individual, and maintains that it would be unreasonable to expect to find the sexual life of the child to be the same as that of the adult, Moll proceeds to the opposite extreme; he not only refuses to regard as sexual in the child any act or function that is not obviously so also in the adult, but, as we have seen, even denies this term to a number of acts which in the adult would certainly be called sexual. Freud therefore widens the conception of sexuality, while Moll narrows it. Another important ground for divergence is the question of method. Moll says that there are three methods available for such a study: (1) experiment (castration, etc.); (2) the observation of children, which is largely vitiated by both the child's inability to describe his sensations and his feeling of shame towards any adult; (3) the later memories of adults. The latter, however, are seriously imperfect, both in extent, the greater number being forgotten, and in accuracy, important subsequent distortions having falsified them in important particulars. Moll sees no way out of this dilemma, and therefore has to content himself with material that is of necessity poor from a scientific point of view. Freud, on the contrary, having devised an exact method, with a reliable technique, namely, psycho-analysis, has been able to correct both these imperfections in the later memories, *i. e.*, to resuscitate what had been forgotten, and to correct what had been distorted. Moll, it is true, will have nothing to do with psycho-analysis, which he says consists in making arbitrary interpretations at will, but it is throughout plain that he is talking without any knowledge whatever of the method, so that his opinion of it is of little interest.

The book as a whole contains many useful and valuable sections, notably those on the legal and educative aspects of the subject, and it may serve to direct attention to an important and neglected field of study; it can not, however, be regarded as having any great scientific value. The translation is as a rule accurately done, and is written in a clear and good style; Dr. Paul has evidently taken great pains with his task, as is shown by, for instance, the useful explanatory footnotes he has added on linguistic and other difficulties. Among the corrections that should be made in a future edition are the following: The title of Freud's *Drei Abhandlungen zur Sexualtheorie* (Three Essays on Sexual Theory) is incorrectly quoted in German and incorrectly translated (page 14); Abraham's paper on "Das Erleiden sexueller Traumen, etc.," is curiously rendered as "The Ill Effects of Sexual Dreams," *Träume* (dreams) being confounded with *Traumen* (traumata).

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*The Influence of Caffein on Mental and Motor Efficiency.* H. L. HOLLINGWORTH. *Archives of Psychology*. New York: The Science Press. 1912. Pp. iv + 166.

The diversity of popular opinion concerning the effects of caffeinic beverages lends a special interest to this admirably and carefully planned investigation. Previous researches on the influence of caffein have been

limited for the most part to studies of ergographic performance and the effects on reaction times. While the general result has been to show the stimulating action of caffeine and an increased capacity for mental and muscular work under its influence, the lack of rigorous control of experimental conditions and the small number of tests on a few individuals make any definite and exact conclusions concerning the influence of caffeine on mental and motor processes doubtful. The present investigation was undertaken to secure unambiguous evidence on this problem for the Coca-Cola Company, by whom the research was financed, and the results have been used as evidence in litigation before the federal courts.

The experiments were made on sixteen subjects, ten men and six women, over a period of forty days, including an intensive experiment of three days to study the effects of caffeine at close range and to determine their time relations, and an experiment of seven days to study the effects of caffeine administered with syrups. The doses, in capsule form, except in the last experiment, varied from 1 to 6 grains and were administered to one squad at half past ten in the morning alternately three days in succession and then sugar of milk three days, to a second squad caffeine and sugar of milk on alternate days at the lunch hour, and to a third squad caffeine and sugar of milk on alternate days from two and a half to three hours after lunch. The control squad was given only sugar of milk daily.

The tests employed were as follows: three motor tests of speed (tapping test), steadiness, and coordination (three hole test), three simple association tests of different degrees of complexity, association of ideas and words with simple objects of experience (color-naming test), association of one idea with another specific idea (opposites test), association of an idea with a specific task or situation (calculation test), two tests of sensory discrimination and attention (cancellation test and discrimination reaction-time). The questionnaire, the daily health book kept by each subject, and introspective notes furnished information on the relation of caffeine to the quality and amount of sleep and to general health.

The effect of caffeine on the speed of motor processes seems to be a stimulation, sometimes preceded by a brief and slight initial retardation, the magnitude of the stimulation varying directly with the size of the dose and being relatively slight when the caffeine is taken in the forenoon. The effect, varying with the size of the dose, begins from 45 to 90 minutes after administration and persists from one to two hours for doses of 1 to 3 grains and as long as 4.5 hours for 6 grains. The effect on steadiness is a slight nervousness after doses from 1 to 4 grains and a pronounced unsteadiness after 6 grains, which begins within an hour or so after the dose and is still greater after 3 to 4 hours. The effect of small doses on coordination is stimulation, while that of larger doses is retardation, slight when taken in the morning, and greatest when taken in the afternoon without food. The magnitude of the caffeine effect varies inversely with the body weight of the individual tested, a result which appears to hold for both the mental and motor tests. One subject was used to test

throughout four weeks the influence of caffeine on speed and quality of performance in typewriting, the general result being an increase in speed with small doses of caffeine alkaloid (1 to 3 grains) and a retardation with larger doses (4 to 6 grains), and a superiority in quality as measured by the number of errors for the whole range of doses.

The general result with the three association tests is stimulation, more apparent after the smaller doses than after the larger ones. The effect begins in 1 to 2 hours when the caffeine is taken in a syrup and from 2 to 3 hours when taken in capsule form. The stimulation in the opposites and calculation tests is present 6 to 7 hours after the dose and there is evidence that the influence of caffeine is still operative the following day, though it is difficult to disentangle the effects of the caffeine from general practise effects. In general the effect on higher mental processes comes more slowly and is more persistent, while with motor processes the effect comes quickly and is transient.

The effect on discrimination reaction time with small amounts of caffeine is a retardation, accompanied by a greater number of false reactions, with larger amounts after two hours a considerable stimulation. The cancellation test, owing to individual differences in method of performance and variations in the same individual at different times, gave no very definite results.

The effect of small doses of caffeine alkaloid (1-4 grains), taken either in the pure form or accompanied by syrup, on sleep is unappreciable except in a few individual cases. With 6-grain doses there is a marked sleep impairment with most subjects, an effect which is greatest when the dose is taken without food. The two principal factors which seem to modify the degree of caffeinic influence are body weight and the presence of food in the stomach at the time of the dose. The general health of the subjects improved during the 40 days, a result attributable to the regular régime of life. It is noteworthy that no secondary reactions or after effects of importance were noted.

The widespread consumption of caffeinic beverages seems to be justified by the results of the experiment. The author carefully points out, however, that the question of the continuous use of the drug and the effect of caffeine in tea or coffee (a cup of coffee contains about 2.5 grains of caffeine) can not be answered by these experiments owing to the possible enhancing or neutralizing influence of other non-caffeine ingredients.

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*Une philosophie nouvelle, Henri Bergson.* EDOUARD LE ROY. Paris: Alcan. Pp. v + 208.

This book comes to us fortified by the following words from M. Bergson himself: "Over and above the method, you have caught the *intention* and the *spirit*. . . This study could not have been more conscientious or more faithful. . . In the measure that it advances, it gives evidence of an increasing effort of condensation; one has the feeling of a progressive rolling up of the exposition on itself, similar to that rolling up by which



I have characterized *real duration*. To give such a feeling to the reader, much more is needed than an attentive study of my works—the faculty of re-thinking, in a personal and original manner, what is therein set forth. Nowhere does this sympathy show more than in the last few pages where you have indicated in a few words the possibilities of ultimate development of the doctrine. I should have said nothing but what you have said.”

To seek untruthfulness to “the master” would be, then, an ungracious task, but the book is not free from the disadvantages, although it has also the advantages, of this close doctrinal sympathy. To a reader about to approach the study of Bergson, or to one who, after a first, or a fragmentary reading, desires an *aperçu* of the whole ground covered, it should prove invaluable, and not the least of its merits is the lucid and wholly charming simplicity of the style of its author. For the already critical student, there is little to be gained from it.

The first half is in two chapters, the first concerned with “Method” and the second with “The Doctrine,” of which the former is rightly made slightly predominant as of more general value. Then follow several miscellaneous sections by way of “Complementary Explanations.” These, however, are disappointing. There is some talk of misunderstandings of critics, but M. Le Roy’s very sympathy with his subject keeps him from understanding these misunderstandings, and from illuminating, more than M. Bergson has already done, the inevitable dark corners of so complex and new a point of view.

Apart from the historical settings, which are brief but excellent, we find everywhere *saying again* substituted for *explanation*, a repeated exposition of Bergson’s own exposition. If the reader is curious as to Bergson’s actual dependence upon the highly questionable biological theory known as neo-vitalism, or whether ambiguities and vacillations such as Professor Dewey seems to find, are real,<sup>1</sup> or why we should strive after an intuition that is merely a “luxury,”<sup>2</sup> he will find no shadow of help. The cruder charges of mysticism, and of the vicious circle of anti-intellectualism, are, to be sure, rebutted, but these charges are usually on a par with those that first met pragmatism, and are to-day unworthy of a scholarly critic.

There remains, then, serious work for the fellows of M. Bergson, as well as for his opponents, and it is to be regretted that M. Le Roy did not devote some of his sympathetic insight to helping them along by a more free and a more critical mode of exposition. In short, one can not help feeling that M. Bergson might have written M. Le Roy’s book even better than M. Le Roy has done it, and that is a pity.

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<sup>1</sup> This JOURNAL, pages 645–668.

<sup>2</sup> “Creative Evolution,” page 47.

## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. October, 1912. *La religion comme type de conduite rationnelle* (pp. 321-337): LEUBA. — An extract from a French translation of Leuba's "Psychological Study of Religion." *L'oubli et la personnalité* (pp. 338-358): DUGAS. — Memory expresses organization, forgetfulness disorganization of the ego. *Les tendances de la logique contemporaine* (pp. 359-378): DUFUMIER. *Revue générale. Le choix volontaire*: L. DAURIAC. *Analyses et comptes rendus. J. Bourdeau, La philosophie affective*: TH. RIBOT. Ossip-Lourié, *Le langage et la verbomanie*: TH. RIBOT. W. Stern, *Die differentielle Psychologie in ihren methodischen Grundlagen*: G.-L. DUPRAT. K. Krall, *Denkende Tiere*: H. PIÉRON. V. Josefovici, *Die psychische Vererbung*: G.-L. DUPRAT. J. Kollarits, *Character und Nervosität*: N. KOSTYLEFF. M. Maurice Vauthier, *Essais de philosophie sociale*: DR. S. JANKÉLÉVITCH. D. J. Hill, *L'état moderne et l'organisation internationale*: A. BAUER. M. Drouilly, *Les problèmes sociaux du temps présent*: E. D. Sp. C. Haret, *Mécanique sociale*: DR. S. JANKÉLÉVITCH. Dr. F. Muller-Lyer, *Die Familie*: DR. S. JANKÉLÉVITCH. Friedrich, *Die Bestrafung der Motive und die Motive der Bestrafung*: G. RICHARD. A. Namias, *La Pedagogia sociale de Paul Bergemann*: J. PÉRÈS. Ravá, *Il diritto come norma tecnica*: G. RICHARD. P. Teodoro Rodriguez, *Augustino, Estudios Sociales*: J. PÉRÈS. É. Terailon, *L' Honneur*: A. JOUSSAIN. *Revue des périodiques étrangers*.

RIVISTA DI FILOSOFIA. July-October, 1912. *Henri Bergson e la cultura Contemporanea* (pp. 407-431): ALBERTO CALCAGNO. — Creative evolution is opposed both to the intellectualistic evolutionism of panlogistic hegelian dualism and to the modern scientific monism. *Il fatto educativo* (pp. 432-466): P. CARABELLESE. — The educational factor is not biological, physiological, or psychological, but teleological, i. e., an artificial adaptation of one individual to others. *L'autonomia scientifica della Storia dell' Arte* (pp. 467-474): A. B. CALOSSO. — The history of art possesses a scientific criterion of its own, namely, taste, which distinguishes it from history proper, and from archæology. *La concezione del caso come ignoranza* (pp. 475-489): C. RANZOLI. — The conception of chance as ignorance is traced from Anaxagoras to Huxley; the author adopts Hume's view of chance as ignorance of causes. *La guerra di fronte alla ragione* (pp. 490-508). — Attacks the view of C. del Vecchio that war is materially destruction and slaughter, and morally deliberate violence on the part of one state to impose its will on that of another. *Note e Rassegne Recensioni e Cenni. Rivista delle Riviste. Varietà e notizie. Atti della Società Filosofia Italiana*.

Kiesow, Friedrich. *Psychologie und Erziehung. Ansprachen an Lehrer von William James*. Leipzig: Verlag von Wilhelm Engelmann. 1912. Pp. x + 134. M. 1.

Monzel, Alois. *Die Lehre vom inneren Sinn bei Kant*. Bonn: Carl Gerogi. 1913. Pp. vii + 332. M. 6.

Raab, Friedrich. *Die Philosophie von Richard Avenarius*. Leipzig: Verlag von Felix Meiner. 1912. Pp. 14 + 163. M. 5.

Renouvier, Ch. *Traité de Psychologie Rationnelle d'après les Principes du Criticisme*. 2 vols. Paris: Armand Colin. Pp. 398 and 386. 16 fr.

## NOTES AND NEWS

On the occasion of conferring the degree of Doctor of Sciences on Professor Josiah Royce at Oxford University on February 25, the public orator, Mr. A. D. Godley, spoke as follows:

Credunt nonnulli populum cottidianis negotiis strenue occupatum non vacare philosophiæ; verum ita natura comparatum est, ut, quemadmodum hominibus, ita civitatibus adulescentia quaedam sit, et nova rerum experientia semper novos profectus faciat: nec mirum est si talis gens hominum, quam stirpe nostra oriundam jactamus, industria, inventione, vigore animi insignis, veritatis cognitionem acriter appetat. Porro, sicut prima gens mortalium ex Oriente lucem expectabat, nos eandem ex Occidente expectare didicimus; ut poetæ nostri Arthuri Clough versus pulcherrimos Latine reddam

“Sol licet in cælum tardo pede surgat Eoum,  
Tractus Hesperios respice: lucet ager.”

Hac gente ortus est philosophus ille, vir gravitate et facundia insignis, quem titulo honorifico ornare Academia nostra placet. Non enim inter eos philosophos numerandus est qui umbratiles scholasticorum notiones secum decantant, sed potius is est qui rem in aciem deduci oportere censeat, ut homines summa voluntate, summo studio, summa religione, contra malos mores in contentionem Virtutis, et, ut ita dicam, in militiam quandam tanquam sacramento adacti, omnes vires animi libere ac fideliter impendant.

Quippe jejunam et infructuosam eam ratus esse cognitionem quæ sit solivaga et humanitatis expers neque societatem generis humani et communitatem respiciat, tanquam e vivo fonte rivulos doctrinæ deducit, quibus aritudinem temporum reficiat, et semina virtutum bonarumque artium auctet atque elat. Hoc enim opus esse philosophiæ plurimis libris et prælectionibus confirmavit, ut desidia et veterno—pessimis illecebris—torpentes excitet, ut vinculis cottidianæ vitæ constrictos liberet, ut ægritudine sollicitos cohortetur.

Ferunt philosophum quemdam Americanum, cum consenesceret, juvenibus nonnullis de recto vitæ itinere consulentibus ita respondisse:

Astro subjungite plaustrum.

Qua sententia, Delphico oraculo digna, significere voluit, non oportere contemplatione et somniis pallescere, sed quomodo ille Heroules contra res adversas

Enisus arces attigit igneas,

totis viribus ad alta animo esse contendendum.



Igitur cum tali sit ingenio præditus, præsentō vobis Josiam Royce, Historiæ Philosophiæ Professorem in Academia Harvardensi, ut admittatur ad gradum Doctoris in Scientia, Honoris Causa.

At the meeting of the Aristotelian Society on February 17, Professor R. F. A. Hoernlé read a paper on "The Analysis of Volition: Treated as a Study of Psychological Principles and Methods." The chief cause of the disagreement among current psychological theories of volition is to be found in differences of principle, *i. e.*, in the conflicting assumptions made by different psychologists about the nature and aim of psychological analysis, the methodical standpoint to be taken up, and the fundamental conceptions to be employed. Most current psychology, in the endeavor to be "scientific," begins with a standpoint so abstract that it is constantly forced, by the pressure of facts, to pass on to more concrete conceptions of mental life. This advance is made uncritically, with the result not only that important problems are left untouched, but also that different parts of the same theory rest often on contradictory assumptions. There are four problems with which every psychological theory of volition must deal: (1) Is volition complex or single? Is its character derivative or unique? (2) Does "realization" or "action" belong to the essence of volition? (3) What are the limits of a single volition within the stream of consciousness? (4) What is the relation of "volitions" to the "standing will," and of the will of the individual to the will of the state? The paper was followed by a discussion.

PROFESSOR WILLIAM P. MONTAGUE, of Columbia University, has delivered the first four of his series of eight Hewitt lectures at Cooper Union. The general subject of the course is "The Great Systems of Philosophy" and the individual lectures already given have occurred as follows: March 3, "Democritus and the Philosophy of Matter"; March 10, "Plato and the Philosophy of Spirit"; March 17, "Stoic and Epicurean: The Philosophy of Conduct"; March 24, "Medieval Christianity and the Philosophy of Nature." The four remaining lectures will be given on March 31, "Descartes and the Philosophy of Nature"; April 7, "Locke and the Philosophy of Experience"; April 14, "Kant and the Philosophy of the Transcendental"; April 21, "Spencer and the Philosophy of Evolution."

THE course of eight lectures given at Columbia University by Professor John B. Watson, of Johns Hopkins University, on "Animal Psychology," was completed on March 18. The topics of the individual lectures were as follows: "Psychology as the Behaviorist Views It," "The Problems of Behavior," "Methods and Apparatus in Behavior," "Sensory Responses in Vertebrates," "The Experimental Study of Instincts and Habits," "The Limits of Training in Animals."

PROFESSOR RUDOLF EUCKEN, of the University of Jena, has completed his course of six lectures at New York University, on "The Fundamental Principles of Ethics with Especial Consideration of the Religious Problem." On March 3 and 4, Professor Eucken lectured at Columbia University.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### "THE NEW REALISM"<sup>1</sup>

THOUGH the polemic spirit has for some time filled the air of philosophy, the numerous marches and countermarches can not be said to have proved decisive. As the walls of philosophy refuse to fall at the mere flourish of trumpets, there has been little change in the *status quo*. Every one, therefore, interested in genuine philosophic progress will welcome this volume and its well-organized attempt to advance the position outlined in the "Platform."<sup>2</sup> Unless, however, I am very much mistaken, the authors of this book may be—pleasantly or unpleasantly—surprised at being welcomed by many idealists, who will regard them, not as hostile invaders, but as much-needed immigrants taking possession of the abandoned or undeveloped soil and rendering it fruitful for the common good. Perhaps the authors of this book may resent this attempt to minimize the importance of the destructive mission of their "class consciousness," but I think philosophers generally are more fortunate in delivering the positive burden of their own vision than in their denial of the vision of others. The polemic consciousness is not in any of its forms conducive to complete justice, and history is full of examples of philosophers, like Aristotle, attacking most vehemently those most closely related to them. It is indeed a wise philosopher who knows his own true opponent. Now neo-realism looks upon idealism<sup>3</sup> as the great enemy, because as a matter of

<sup>1</sup> A Review of "The New Realism: Cooperative Studies in Philosophy" by Edwin B. Holt, Walter T. Marvin, William Pepperrell Montague, Ralph Barton Perry, Walter B. Pitkin, and Edward Gleason Spaulding. New York: The Macmillan Company, 1912. Pages xii + 491.

<sup>2</sup> This JOURNAL, Vol. VII., pages 393 ff.

<sup>3</sup> The essence of idealism, as that term has been used in philosophy, literature, art, politics, etc., is that the structure of the universe justifies certain values, called ideals, and with that doctrine the authors of this book have no quarrel whatsoever. They are fighting epistemologic subjectivism; but for some unaccountable reason they always call it idealism. That this use of the word idealism involves unusual violence to the facts of history, *e. g.*, in the implication that

fact the former movement originated in a reaction against such types of idealism as is embodied in Bradley's "Appearance and Reality" and Strong's "Why the Mind Has a Body." When, however, one disregards the accidental starting point and judges neo-realism by its fundamental tendency, the opposition between realism and dualistic or psychologic pragmatism will be seen to be of far greater significance. Between a position which would regard everything in terms of the subject and a position which would regard everything as objective, there may be very little or no *theoretic* difference, for the same laws or relations may hold between "experiences" as between "independent reals," *i. e.*, the distinction between different classes of entities may be the same in the two systems. Between a view, however, which insists that the propositions of logic and mathematics are as real or objective (*i. e.*, independent of "mind") as those of physics, and a view which denies to objects of thought the ontologic status of objects of sense, the issue is significant, and, it seems to me, laden with momentous consequences. I regard, therefore, the problem of the reality of universals, "the things of thought," as the central question which this volume raises. It is not, then, so much Berkeley's subjectivism (about which there is considerable doubt) as his nominalism that presents the significant alternative to the neo-realist position. At any rate, if Professor Marvin's paper proves its point, the epistemologic issue can not be the fundamental one, but must yield in fundamental importance to issues of fact or theories of being.

Nominalism, the denial of "reality" to relations, abstractions, etc., is based on the conscious or unconscious assumption of the ancient dogma that only a whole can really exist and that which is a part (in intension) can not have independent existence. The essence of neo-realism, the object's independence of our apprehension of it, as developed by Professor Perry, would be utterly impossible on a nominalistic metaphysic, and so would Professor Spaulding's doctrine of analytic realism. At any rate, it is a significant fact that the one positive doctrine which all the six authors find themselves compelled to use in their arguments, is the non-mental character of the propositions of logic and mathematics.<sup>4</sup>

There is, to be sure, a certain hesitation in the author's repudiation of nominalism (*e. g.*, p. 58).<sup>5</sup> While in general they "accord full on-an idealist like Hegel is an epistemologic subjectivist, ought to be clear to all students of the history of philosophy. But this is a minor matter, if the sympathetic reader will simply substitute the word *subjectivism* wherever the authors use the word *idealism*.

<sup>4</sup> Marvin, pages 57 ff., Perry, pages 129 ff., Spaulding, pages 204-205, Montague, pages 261-2, Holt, pages 363 ff. and page 472, Pitkin, pages 445 ff.

<sup>5</sup> The word nominalism does not occur in the index.



tological status to things of thought," logical and mathematical entities are denied the claim to existence, but are put in the undefined but spacious realm of subsistence. I can not, however, but regard the distinction between existence and subsistence—which the authors have borrowed from Russell—as merely a temporary or provisional make-shift. Certain sensible or physical terms in time and space are regarded as existents, and all other possible or impossible objects of thought are subsistents. This, like most dichotomous divisions, can hardly be expected to be of much use; for it puts too many things in the negative class (in this case, the class of subsistents). The question is important, because the facile division of objects into existent and subsistent tends to obscure the fundamental problem or requirement of any constructive philosophy, viz., a systematic classification of reals, or doctrine of categories. To the neglect of this problem may be ascribed a great deal of the misunderstanding and futility of modern philosophic controversy.

The distinction between existence and subsistence arises from a certain requirement in the modern philosophy of mathematics, viz., that mathematical propositions shall have a meaning which is non-psychologic and non-physical. Russell expresses this fact by saying that mathematical entities must be non-mental and non-existential. Hence the term subsistence to cover those entities. The restriction, however, of the term existence to sensible objects, which this terminology implies, leads to considerable confusion in the neo-realist philosophy.<sup>6</sup> Russell's statement repeated by Marvin (p. 85) that the non-existential character of mathematics is one of the greatest discoveries of the nineteenth century, is, of course, true. But what it means is simply that mathematical propositions are formal, and their truth is independent of the truths of physics. Mathematical entities, then, are not physical, but they certainly have being as much as physical entities do. What reason can there be, outside of a nominalistic metaphysic, for denying the existence of one and not of the other? Moreover, the restriction of the existential predicate to sensible terms gives rise to confusion in the realm where the distinction between existence and subsistence first arose, viz., mathematics. When a mathematician proves an existence theorem, *e. g.*, that every equation of the  $n$ th degree has  $n$  roots, he surely estab-

<sup>6</sup> Russell says: "Except space and time themselves, only those objects exist which have to particular points of space and time the special relation of occupying them," (*Mind*, 1904, page 211). I take it that Russell means to predicate existence of those things only which occupy *both* time and space; so that things occupying time only, *e. g.*, misunderstandings of realism, do not exist. Moreover, in the light of other utterances, Russell probably means that only points of space and time exist, but that the series denoted by the terms time and space, like existence itself, do not exist.

lishes something more than the subsistence of these  $n$  roots, for the  $n + 4$ th root of the same equation has according to the neo-realists canon (Montague, p. 253) subsistence though demonstrably no existence. The difficulty here raised does not seem to be sufficiently met by Russell's contention that mathematical existence denotes something totally (*i. e.*, generically) different from physical existence. For, if mathematical existence is only a kind of subsistence, it is surely of the utmost importance to distinguish between the subsistence of the  $n$ th root and the subsistence of the  $n + 4$ th root. Instead, then, of inquiring into the kinds of existence, we have to inquire into the kinds or grades of subsistence.

Is it true, however, that mathematical and physical existences are so generically different that they have nothing in common? For one thing the determination of physical existence is frequently, if not always, based on mathematical existence. Moreover, the manner in which mathematical and physical existences are determined is exactly the same. Take the questions: Is there a root to every equation? Is there a maximum velocity in the physical universe? Is there a special sex-determining factor in the germ cell? Did Moses have a real (historical) existence? Now in all these significant questions, the existence or non-existence of the entities in question is determined, in their respective sciences, not by reference to the question whether they are mental, but by reference to their relation to the body of propositions which form the sciences in question.<sup>7</sup> What reason can there be, on realistic ground, for saying that roots and velocities have no existence, but that the other entities do? Does it not seem that what we need is a fuller account of the different levels or types of existence?

This question of the distinction between existence and subsistence is an illustration of the truth of the authors' contention (pp. 21-22) that care in the use of words is really important. An adequate doctrine of categories would do away with a great many of the difficulties which Montague, for instance, finds in the existence of error and hallucinatory objects. (This does not hold of Holt's theory). Errors and false propositions do undoubtedly exist in this world, if anything does. The significant question is how do they exist, *i. e.*, to what type of existence do they belong. Many people, for instance, will find unconvincing Spaulding's arguments for the existence of points in space, or of atoms in material bodies, and will find good reasons for their unbelief. This situation arises from the fact that points are non-spatial (*i. e.*, non-extended) and atoms non-material (*i. e.*, devoid of the ordinary properties of matter). Points and

<sup>7</sup> This point is missed by most critics of realism, *e. g.*, Professor Pratt, this JOURNAL, Vol. IX., page 579.

atoms, then, do not have the *kind* of existence of space and matter; and unless this distinction is clearly recognized, both the affirmative and the negative positions seem equally tenable or untenable.

In the light of a developed doctrine of categories, also, the distinction between discovery and invention, between finding and making, which dominates neo-realism in its present stage, may turn out not to be as thoroughgoing as it appears in the light of current controversy. The distinction in question is certainly valid for a great many types of reality. There is a real logical opposition between discovering and inventing a polar continent. But did the Romans invent or discover their jurisprudence? Did the authors of this book invent or discover the neo-realist philosophy? These questions suggest the possibility of a realm where invention and discovery overlap, or cease to be clearly antithetic terms.

The authors' own statement (pp. 2-10) of the historical significance of neo-realism seems rather unfortunate. The account in question reads too much like an Hegelian *a priori* history, with its distinct stages each by a dialectic process giving rise to its successor. I regard it as unfortunate because it is not likely to discourage critics from dealing with neo-realism as a new epistemology, whereas it is really a return to a mode of thought in which the epistemologic specter need not trouble us. Take, for instance, the theory of error. The authors (and their critics, like Professor Lovejoy) assume that the first method of explaining error is by the introduction of mind or consciousness. That, however, is not the fact, for this action of consciousness as a disturbing medium seems to have been suggested by the modern use of lenses. The earlier attempt to explain error, found alike among the Hindoos and Greek philosophers, is to give error a kind of secondary or shadowy existence of its own. *Maya* is not due merely to consciousness, but is a sort of maze or fog which surrounds the real, and "the way of error" in Parmenides is certainly not "the way of consciousness." The neo-realist doctrine of error (as briefly indicated in the essays of Holt and Pitkin) will, in fact, be found to begin where the Greeks left off, and to develop the ancient method in a form consonant with the requirements of modern science.

The one modern movement with which neo-realism is closely allied (in motive, at least), is radical empiricism. James was profoundly dissatisfied with the prevailing nominalism, and saw that it must logically lead to a hopeless and lifeless atomism. James tried to restore in philosophy the fluency of things, by giving relations, transitions, etc., a psychologic status. Neo-realism aims at the same results, but turns its back on any attempt to construct the world out of psychologic states. In the light of modern mathematical research, it



returns to the Aristotelian insight that what is prior in knowledge need not be prior in nature, and thus re-opens the path of progress along which all the objective sciences have been going, but which has been shut to philosophy by the specters of epistemology.

## II

The logical and historical introduction to neo-realism is to be found in Professor Marvin's essay on "The Emancipation of Metaphysics from Epistemology." The neo-realist movement is a "reaction against the whole enterprise of Locke, Kant, and their followers, to get a fundamental science, and not merely against their idealism. Neo-realism is not only a different theory of knowledge, but, what is more important for metaphysics, a different doctrine as to the place of epistemology in the hierarchy of the sciences" (p. 51). Professor Marvin does well to thus refer to Locke as the father of criticism, for Kant's boastful claim often makes us forget that it was Locke who first set in fashion the view that we must examine the nature of knowledge before "we let loose our thoughts into the vast ocean of being."<sup>8</sup> Professor Marvin's attack, however, is directed more particularly against the Kantian view of an *a priori* science of knowledge as the necessary prerequisite for metaphysics. To offset epithet criticism, Professor Marvin adopts the admirable device of calling his position dogmatism and opposing it to criticism. Kant's assumption of the possibility of a science or "critique" which can determine *a priori* the nature, possibility, and limits of knowledge, is really untenable; for epistemology can function only if it assumes that we already are in possession of valid knowledge, and this knowledge, as a matter of fact, it borrows from logic, psychology, etc. The "possibility" of mathematics, physics, or metaphysics is far less questionable than the possibility of epistemology. The neo-Kantian may reply: "Of course we must assume that we are in possession of valid knowledge in order to proceed at all. But Kant never supposes that the validity of science is in need of proof. The significant question for him is, What are the conditions which make valid knowledge possible?" To which we may answer, that this way of putting the question is inconsistent with the claim of epistemology as an *a priori* science more fundamental than metaphysics or psychology, for the actual conditions of valid knowledge can be determined only on the basis of logical, psychological, or metaphysical data. Indeed, Kant himself really does assume a particular system of psychology of various "faculties," and certain definite views of reality in order to work out his deductions of the categories and

<sup>8</sup> Essay I., ch. I., sec. 7.

other parts of his critique of pure reason. This Kantian metaphysics may be valid. What Professor Marvin is intent on proving is that it does not follow from, but, on the contrary, is the basis of Kant's epistemology. The same may be said of the neo-Hegelian metaphysics of Greene and his followers, which they claim rests on an examination of the nature of knowledge. The history of science shows no important scientific advance or metaphysical progress due to epistemology. On the contrary, whatever influence the latter has exerted on the former seems to have been pernicious. The various sciences and metaphysics, therefore, are and by right ought to be, free and independent of the sovereignty of epistemology, and they may go on to develop their fields without waiting for the issue of a permit by the science of epistemology.

This, I take it, is the gist of Professor Marvin's careful and most conscientiously worked out argument. It seems so cogent and unanswerable that it arouses a very distressing reflection, why has philosophy so long failed to note this? Marvin's argument has been, in part at least, made by such different writers as Hegel<sup>9</sup> and the Friesian school,<sup>10</sup> but the intellectual world, without stopping to refute these arguments, has calmly ignored them. Even the positive sciences now feel it incumbent upon them to pay their respects to *Erkenntnistheorie*, while metaphysics is considered as belonging to the intellectual underworld. Nay, even Professor Marvin himself subscribes to the statement of his colleagues that the epistemologic question "is prior to all other philosophic issues" (p. 10).

Perhaps, however, the line between neo-realism and criticism is not as sharp as Professor Marvin draws it. What Kant calls transcendental method is not very much different in essence from that which Marvin calls logical analysis and which, he maintains, is independent of psychology. The more fundamental difference, I venture to think, lies elsewhere, viz., in the conception of the realm of metaphysics. Kant's metaphysic is essentially anti-evolutionary, *a priori*, and incapable of progress. "Pure speculative reason," he tells us, "is able to give a complete enumeration of the possible modes of proposing problems to itself, and thus sketch out the entire system of metaphysics"; and again, metaphysics, by means of criticism, "can take in the whole sphere of its cognitions, and can thus complete its work, and leave it for the use of posterity, as a capital which can never receive fresh accessions."<sup>11</sup> If we no longer believe reality to be such a closed and limited system, then we must give up the at-

<sup>9</sup> Encyklopädie, § 41.

<sup>10</sup> Nelson, "Über das sogenannte Erkenntnisproblem."

<sup>11</sup> Preface to 2d ed. K. R. V., page xxiii.

tempt to deduce it *a priori* and complete from the nature of knowledge as such.

This anti-evolutionary view in the background of criticism explains why the most blighting effects of criticism have been felt by such young growing sciences as sociology and jurisprudence.<sup>12</sup> Workers in these fields are distracted at the outset by purely formal problems, as what is the nature of social science, its method, its object, its limits, etc., etc. But there is no way of finding the limits of a science except by actually developing it first. Epistemologic criticism is applicable to science only when the latter is in a state of *relative* completion, *e. g.*, in certain fields of mathematics and physics. Then questions of procedure, the convenience of hypotheses, etc., have a definite meaning. But such considerations must follow and can not precede the constructive stage.

The elimination of "critical" epistemology leaves the field clear for constructive metaphysics. Now, unlike most recent philosophic procedures, neo-realism takes modern physical science seriously, or, if you please, naïvely. It does not regard it as a "mere construction of the mind," a more or less useful falsehood, but as a valid method of discovering the constitution of reality. Hence, in adopting the mathematical or analytic method of science as also valid for philosophy, neo-realism finds itself under the guns of men like Bradley and Bergson, who deny that analysis can enable us to reach ultimate reality, and insist that it must necessarily falsify the real. Hence the need for Spaulding's essay, "A Defence of Analysis," "as a method of knowing which discovers entities or parts which are real in quite the same sense as are the wholes which are analyzed" (p. 155). The neo-realist is quite willing to admit that the actual analyses which men make are selected from a larger number of possible ones, but this does not prove that they are falsifications. If there are more parts or further divisions than those employed in our analysis, it does not follow that our analysis is false: it may be true as far as it goes. As the opponents of analysis do themselves employ analysis in their attempt to prove their contention, it is at least doubtful whether *all* analysis can be false *qua* analysis. Professor Spaulding, therefore, examines in detail the various types of analysis, viz., that of aggregates, classes, and organic unities, and shows that in each case the objections are invalid.

An aggregate is analyzed by enumeration, *i. e.*, by naming the parts and the conjunctive relation. Why is this falsification? Because, says Bergson, there is no genuine plurality in nature itself,

<sup>12</sup> See Cosentini, in *Revue Int. de Sociologie*, Jan., 1913, and Fragnane, "Obbietto e limite della filosofia del diritto," II., pages 77-83.



but all things interpenetrate.<sup>13</sup> This assumption, however, of a *universal* interpretation is a mere snap judgment or violent generalization without adequate evidence. Any evidence for interaction must, of course, begin by recognizing different things which interact.

Under the analysis of classes Spaulding includes the analysis of number, space, time, motion, velocity, and acceleration, and such classes of individuals as atoms, electrons, etc. The attack on this kind of analysis is stated by Bergson in a form the logic of which is identical with that of Zeno's attack on motion. According to this attack analysis breaks up space into non-extended points, time into unenduring moments, and motion into a series of rests. But these supposed parts are the contradictions of the given wholes. Therefore is analysis falsification. To which Professor Spaulding justly replies that this attack ignores and misstates the actual results of modern analysis. The divisibility of continuous space does not lead to discreteness, but, on the contrary, defines definitely what is meant by continuity; and, in the same way, it is not true that modern analysis resolves motion into a series of rests. In its account of analysis, this attack leaves out the *organizing relations*. While points, for example, are non-extended, there is no contradiction in saying that space is a class of points between which certain relations hold. "Consider both terms *and* relations and the properties of the whole which may be left over, but which are revealed by analysis, and the analysis becomes *adequate* at the same time that there is opportunity for that 'creative evolution,' for that creative synthesis which some of the attacking party emphasize so strongly, but which is not dependent, for its acceptance, upon the validity of the attack" (p. 168.)

Organic unities are distinguished by the fact that they are wholes possessing properties which are not the sum of the properties of the parts. This, however, is not confined, as is usually supposed, to organisms. There are *some* qualities in a compound like water which can not be obtained by adding the qualities of the components. But whether the parts modify each other when united, or whether new organizing relations arise when the parts are united as they were not before, in either case scientific analysis or synthesis is adequate to reveal the real change in nature. The introduction of entelechies to distinguish organisms from inorganic physico-chemical complexes is either scientifically pernicious or unnecessary, according to whether the entelechies do or do not introduce an element of indeterminism. A supervening awareness may occur, and "it is good realism to admit that it may," but it can not be used as a principle of explanation.

The attack on conceptual analysis as conceptional, is based on the

<sup>13</sup> "Creative Evolution," pages 11, 162, 188, 338, 340.

argument that concepts are necessarily static and inadequate to grasp change or process. But why assume that only like entities can be related? The concept of divisibility need not be divisible. At any rate, there is no real contradiction in a definite or fixed concept of a flow, and Bergson himself uses concepts to denote the three *kinds* of change.

In this connection Professor Spaulding briefly indicates (p. 233) four important characteristics of concepts, or "states of affairs." These will well bear more extensive development in a future paper.

It must be conceded, I think, that Professor Spaulding's very laborious arguments show the utter flimsiness of the attack on analysis, so far as the latter is based on the argument that analysis of space, time, or motion leads to contradiction. This last argument simply ignores the fact that modern mathematics by its analysis of infinity and continuity has definitely solved Zeno's puzzles. Besides the change of contradiction comes with bad grace from those who are skeptical about the force of logical contradiction when it is applied to their own doctrines. Nevertheless, there is an element of real force in the contention that analysis is by itself inadequate to give us a complete account of space, time, and motion, and that resort to intuition is necessary. Mathematical analysis can reveal to us only the formal or structural properties of such entities as space. Having started with a number of postulates relating to indefinable "points," the properties deduced will be the same if these "points" are numbers, ideal citizens of an ideal commonwealth, or what not, so long as the defining relations hold between them. What distinguishes physical space from any other possible interpretation of *S* (mathematical space) can, therefore, be grasped only by intuition. Spaulding's statement (following Russell) that "points" are spatial is hardly warranted by his own analysis, in which "points" are necessarily (not "probably") indefinable. Professor Spaulding also seems to forget that space is not determined solely as a point collection; it may also be constituted in diverse other ways, *e. g.*, as a four-dimensional collection of lines, in which the lines are the simple elements and points complexes formed by the intersection of lines. This, of course, in no way militates against the validity of any of these analyses of space. The same thing may be correctly expressed in different sets of units without damage to realism. But reflection on these considerations, enables one to understand some of the *motives* of those to whom the world appears more fluid than to Professor Spaulding. Indeed, there is a hard and fast finality about some of the latter's statements which is hardly warranted by the present state of science, *e. g.*, the statement that points presuppose numbers (p. 174) is certainly not

true if we restrict ourselves to projective geometry. In his realistic zeal, also, Professor Spaulding seems to me to obliterate the distinction between hypothesis and fact, as in his argument for the reality of atoms. It is well to take science seriously, but why should philosophers be compelled to take scientific hypotheses more seriously than scientists themselves do? Why pin the hope of our salvation on atoms when leading chemists like Ostwald, Duhem, and others can get along without them? Moreover, many scientists who profess their allegiance to the atomic hypothesis do so merely as a matter of form. Take any text-book on crystallography, on the phase rule, or on any branch of thermodynamics. You may find a good deal said at the beginning about the atomic constitution of matter; but when the real work begins all that is silently disregarded, and integration formulae are introduced which presuppose the continuity of matter. Indeed, the attitude of most working scientists to-day to the atomic and other regnant theories is very much like that of the Mexican governor who is reported to have said: "I owe allegiance to whatever brigand is duly elected president, but first of all I must maintain order in my own province." Whatever objections may be brought against this view, it at least saves us from the extremes of anarchy and vicious absolutism.

Professor Perry's essay, "A Realistic Theory of Independence," is a painstaking attempt to define the distinctive epistemologic doctrine of neo-realism. The new realism differs from the old realism of Reid in giving up the doctrine of a substance behind the qualities. (I am not sure whether Professor Montague always does so.) Its distinctive note is that the object is independent of the knower. What does this mean? It does not mean, we are told, the absence of any relation between the object and our knowledge, nor does the neo-realist even wish to deny that knowledge may be in some sense prior to the object. By the term independent we are to understand simply the absence of certain specific relations which constitute dependence. "In order to prove the dependence of  $a$  on  $b$  it is necessary to show that  $a$  contains  $b$ ; or that  $a$  is the cause or effect of  $b$  in a system which exclusively determines  $a$ ; or that  $a$  implies  $b$ ; or that  $a$  is implied exclusively by  $b$ . To exhibit any relation of  $a$  to  $b$  other than these is beside the point. Whether  $a$  and  $b$  be otherwise related, or not, does not affect the independence of  $a$ " (p. 117).

It is clear that with this definition of dependence our opponent will never be able to prove the dependence of the object on consciousness; for, if it can be shown that the object is in any way determined by something else, it can no longer be said to be exclusively determined by consciousness and is, therefore, independent. On the other hand,



so far as this definition goes, one may believe that consciousness modifies every real and yet maintain that the latter is independent of the former—which would make it seem as if the chief novelty of neo-realism on this point is the use of the word *independent* in an unusual sense. Indeed, the proposed definition of independence is not only somewhat unusual, but even directly contrary to popular use which conceives what is included, implied, caused, or explained as the dependent term rather than that which contains, implies, causes, or explains (p. 115). Certainly a use of the term *dependence* which makes the premises of a syllogism depend on the conclusion (p. 121) involves some violence to ordinary usage. The neo-realist, of course, has a perfect right to define his terms in any way he pleases; but as he can not change the flavor which words carry along with them, some confusion is bound to result.

The really vital point of Professor Perry's argument, however, consists in the elimination of the ego-centric predicament, by showing that the ubiquity of the knowledge relation is irrelevant in the determination of the real. Indeed, scientific procedure depends on this very ability to show that a condition may be irrelevant even though it is always present. "It is the task of science to distinguish within a total manifold those factors which do count and those which do not." Thus, *e. g.*, the equality of the ratios between the sides of a triangle and the sines of the opposite angles is discovered in a larger context containing, among other things, the absolute magnitude of the sides; but though present, the absolute magnitude does not count. Similarly, "when Galileo discovered that acceleration was a function of the time of a body's fall, he discovered that it was not a function of the body's weight or volume. And to establish this it was not necessary for him to obtain an instance of a body without weight or volume; it was sufficient for him to show that the factors, although present, *did not enter into the calculation*" (p. 132). From this it clearly follows that an object *may* enter into or go out of the cognitive situation without losing its independence.

In the concluding portion of this essay, Professor Perry examines various cases of "subjectivity," and concludes that the whole realm of value, art, history, society, life, etc., is dependent on consciousness, though independent of reflective or secondary conscious relations with which it may enter. This admission or qualification may minimize the issue between realism and "idealism"; but the critical onlooker may well ask whether it does not prejudice the argument in the earlier portion of the essay. Where is the difference in point of objectivity or independence between a proposition of mathematics and one of economics? Many judgments of value are purely logical or

mathematical. The test is laid down that "in so far as any given object is deducible otherwise than from consciousness, it is independent of consciousness" (p. 135); and from this it is argued that if the mean velocity of Jupiter can be deduced from the gravitational system without reference to cognition it must be considered independent of the latter. But is not the economic value of a thing in the same way determined, not by reference to cognition, but by its quality, quantity, cost of production, etc?

It would be a pity if Professor Perry's view, that judgments of value have not the same objectivity as judgments of mathematics or logic, were to lead to the view that neo-realism has no message for ethics or philosophy of life. To at least one reader of this volume the great promise of neo-realism is precisely in the latter direction. The great confusion and futility of social theory to-day seems to me to result from the attempt to build up a social philosophy on a nominalistic logic. Nominalistic logic must inevitably lead to atomistic individualism and to a psychology of moments or "states," as can be seen in the history of ethics from Antisthenes to Bentham or Spencer. By emphasizing the reality of universals or "organizing relations," by recognizing the latter as real causes, neo-realism supplies a much-needed aid to the analysis of the larger life.

Professor Perry and his colleagues frequently speak of absolute simples. It is worth while raising the issue whether there are such things. The argument is advanced that analysis, *i. e.*, the recognition of complexes, presupposes the existence of simples. But obviously this simplicity is always relative to a specific complex. In another context this simple term may itself be very complex. Smith may be a simple unit for purposes of vital statistics, but infinitely complex to his teacher, business partner, or sweetheart. A point is a simple entity in our ordinary three-dimensional space, but a complex in line geometry; and so, atoms, electrons, the color green, etc., are simples in certain contexts and complex in others. Even logical ideas like "implication," "disjunction," "negation," etc., can be simple ideas in one system, and complex in another. (Compare the indefinables of Russell's "Principles of Mathematics" with those of the "Principia Mathematica.")

The foregoing three essays may be considered as an attempt to clear the ground and indicate the method for a constructive metaphysic. Thus considered they represent the necessary common ground for the six writers. The remaining three essays are devoted to a special problem which arises on this common ground, *viz.*, the nature of consciousness and error. As the solutions which Professors Montague, Holt, and Pitkin offer differ from each other, and as

in the present temper of philosophic discussion this topic is certain to receive more than its due share of attention, it is not necessary to review it here in detail.

In his suggestive essay, "a Realistic Theory of Truth and Error," Professor Montague approaches the problem from a modified form of his theory which identifies consciousness with potential energy. Consciousness consists of the self-transcending implications which the brain-states sustain to their extra-organic causes (or effects). "Now if we single out some one event and inquire as to its cause, we shall find a plurality of possible antecedents, any one of which if it had not been counteracted would have produced it. . . . It follows from this that the implicate or conscious object of any brain state may be, but need not be, an event which actually exists" (p. 287). According, then, as the implicates are real things or their contradictions we have truth or error.

The anthropomorphic or "common sense" view of causality which this theory involves is of such limited application that Professor Montague is sure to encounter considerable trouble in convincing others of its adequacy. Professor Pitkin, for one, is convinced that implication or meaning is of much wider extent than causality, *e. g.*, the triangle implies [in Euclidean space] a constant sum of interior angles; but the angles are neither the cause nor the effect of the triangle (p. 485). It seems as if Professor Montague, the pioneer of neo-realism in this country, is in danger of being considered a reactionary by his more progressive or radical brethren. Thus, he refuses to accept the relational formula which would explain the real existence of an optically bent but tactually straight stick. He does not allow hallucinatory objects to invade the "real" world, and lapses into such traditional utterances as "my awareness of objects is more certainly real than anything else" (p. 269), and "we are more certain of our own thoughts and feelings than of anything else" (p. 290). In spite of the fact that he clearly points out that it is not because of any character of belief, but "because of what is believed that the belief is true or false," he is not willing to accept the view that truth or falsehood are qualities of certain objects or complexes.

In common with Professor Spaulding and perhaps several other of his colleagues, Professor Montague holds to the priority of empty time and space over the content which fills it. No proof is offered for this position, nor does it seem necessary for the realistic position. Realism does not seem inconsistent with the view that time is the measure of motion, and space a way of coordinating positions. Meta-physicians who assume an absolute time or space should at least reckon with the recent relativity theory of Einstein and Minkowski—



the only theory which satisfactorily explains the Michaelson-Morley experiments. According to this theory the time interval is just as relative to the point of observation as the angle which a line subtends.

Any one who is inclined to think that realism tends in the direction of materialism will find much food for thought in Professor Montague's keen criticisms of panhylism (pp. 269-272, and 277). Professor Pitkin in stating the agreement between Professors Montague, Holt, and himself says: "Whatever consciousness is, it is somehow connected with the activity of getting 'beyond space and time'; that is, of adjusting variously to events beyond the organism's own skin and to conditions more than material" (p. 485).

As original and constructive contributions to philosophy, quite apart from the realistic thesis, the essays of Professors Holt and Pitkin seem to me the most important in this volume. Professor Holt's remarkably well-organized attack on the theory of specific nerve energy cuts at the root of a good deal of the vain speculation which has overrun modern psychologic philosophy; and Professor Pitkin's effort at evolving a new system of categories wherewith to express our biologic experience will go far to remove the light-hearted reliance on the categories of popular biology which are frequently nothing but the remnants of outworn metaphysical systems. Limitations of space, however, and regard for the main current which runs through all the essays, make only scant treatment of them possible.

Some neo-realists and all their critics seem to feel that the problem of error is a crucial one for neo-realism. I confess that while the problem is one of the utmost importance, I can not see that it is peculiarly a problem for the realist any more than for anybody else—and most modern schools have dodged it. If we maintain, as any analysis of scientific procedure compels us, that a proposition is true or false not because we make it or believe it, but because of what is asserted in it, or because of the relation it bears to other propositions, then it seems to follow that truth and falsehood are equally independent of the consciousness in which they appear. At any rate, there is no evidence from science that the line between the true and the false, the real and the erroneous, is identical with that between the non-mental and the mental. The denial of the realistic position, therefore, can be made only on the basis either that all objects are mental or that only unreal objects are of mental origin. The former does not explain the difference between the true and the false, and the latter admits the non-mental character of real objects.

Be that as it may, it is a fact that the existence of non-mental but illusory objects is generally considered paradoxical; and Pro-

fessor Holt's essay, "The Place of Illusory Experience in a Realistic World," tries to meet the objections on this ground. The argument that in the case of an illusory object the person sees what is not there, hence the act of seeing is constitutive of the object, is met by showing many physical processes of copying, by cameras, etc., which reproduce the same distortions or reduplications of the objects concerned. There is, therefore, every reason to suppose that the distortion or reduplication is due not to consciousness, but to the physical relation between the sense-organs and the object. Thus the relativity of secondary qualities, the production of negative or complementary after-images, etc., are paralleled by the action of thermometers, the receiving mast of a wireless telegraph system, etc. To the argument that the outside world contains only primary qualities and vibration rates, and that the secondary qualities must be aroused in the mind by specific nerve energies, Professor Holt, after thoroughly refuting the specific nerve-energy theory, produces a new hypothesis which attempts to deduce the secondary qualities from the frequency interval of nerve pulses or vibration, and thus reduce them to a genuine part of the objective order. As this hypothesis will probably be seen to greater advantage in his forthcoming book on "The Concept of Consciousness," discussion of it had better be postponed for the present. It is enough to indicate that it attempts to solve the problem of illusory objects by showing "that the nervous system, even when unstimulated from without, is able to generate within itself nerve currents of those frequencies whose density factor is the same as in ordinary peripheral stimulation (p. 352); hence the illusory object with its secondary qualities is a genuine part of the physical system.

The failure to work out clearly a theory of types or levels of existence gives the neo-realist assertion in regard to the *objectivity* of illusory objects the appearance of self-contradiction. It seems to say that these *illusory* or *unreal* objects are *true* or *real*.<sup>14</sup> The reader, however, must not interpret the argument that illusory objects are objective, non-mental, or parts of the physical world, to mean that they are true or existent reals, for the neo-realist does not believe that the objective is necessarily *existent*; it may merely have being or *subsistence*. Nor has the illusory object the quality of being true. In the subsistent world all sorts of contradictory or opposite propositions are found side by side. It is only when we limit ourselves to "existent" entities that contradictory propositions can no longer be applicable (p. 366). (As thus used the term "existent" covers not

<sup>14</sup> It is so misunderstood by Professor McGilvary, *Philosophical Review*, Vol. XXII, page 64, line 8.

only physical and mental terms, but also mathematical entities whose existence is demonstrated).

Of great significance is Professor Holt's criticism of Mr. G. E. Moore's view that consciousness and its objects are distinct existents, between which there is only the unresolvable relation of awareness. The latter view seems to be based on an undue emphasis on the qualitative difference between the object and idea; thus, "fire burns, but the idea of fire does not," etc. Professor Holt's answer is, "Fire burns, but the shape of the flame does not." Surely the two are not, therefore, two distinct entities.

In his essay on "Some Realistic Implications of Biology," Professor Pitkin has attempted to introduce more material than can conveniently be compressed within the 90 pages at his disposal. It is to be hoped that he will soon expand this into a respectable volume and thus, perhaps, render it easier for the reader.

The main points which, as a result of his analysis of the biologic situation, he contributes to the realist position are:

1. The organism does not always modify the stimulus. As against Professor Dewey, for instance, it is maintained that "at least in some cases the eye activity does not condition the specific light-character of ether vibration, but only the distribution and employment of these" (p. 417).

2. The doctrine of internal relations and what is often called the "organic" view of things find no support from the facts of biology. According to the "organic" view every part of an organic whole depends upon the whole and no part can be removed without destroying the whole. The facts of experimental biology flatly disprove this so far as natural organisms are concerned.

3. Planes, angles, numbers, ratios, and other such mathematical-geometrical characters are genuine stimuli. They are thus real causes.

4. The cognitive situation can be interpreted realistically by means of a very suggestive analogy from projective geometry. Professor Pitkin thus tries to make clear "how errors, illusions, and hallucinations are not made by consciousness nor are peculiar to it, but are necessary features of a projected physical system" (p. 377).

Attempts like these to dispense with old accredited categories and to invent new descriptions which will eliminate discredited metaphysical doctrines, make neo-realism appear excessively technical and complex. However, if we distinguish between the familiar and the simple, may not such an attempt lead to greater simplicity?

Apart from its specific doctrines this book is bound to be influential in raising the standard of philosophic workmanship. Many,



doubtless, will be offended by the somewhat scant courtesy to all previous philosophy; and the promises of reform in the introduction will be regarded by many others like a set of New Year's resolutions, pious and necessary, but of doubtful efficacy. Few, however, will deny that the authors have done their work in a genuine scientific spirit. The book contains almost no rhetoric. There is no running loose with such catchwords as experiential, functional, dynamic, etc. Problems are minutely and patiently examined for their own sake, and not simply as points in a more or less subtle apology for supposed valuable human interests, like the belief in immortality, freedom, etc. The authors in the main resist the temptation to deal with wholesale affirmations or negations, but insist on a careful examination of the various meanings and situations involved, thus tending to restore *discrimination* as a philosophic virtue. By thus submitting the things of thought to the same careful study as the things of sense receive in the physical sciences, the traditional difference between empiricism and rationalism as methods is wiped out, and neo-realism may as well be called neo-rationalism or neo-empiricism—differing from the older empiricism in recognizing the immediate reality of the “things of thought.”

Neo-realism is frankly intellectualistic and we may expect its opponents to call it neo-scholasticism, but scholasticism of a kind has always been needed to police the intellectual realm and check the riot of anarchic mysticism.

The book before us is not likely to go through twelve editions within the next year or to receive the Nobel prize for “idealistic” literature. It lacks the sweep of popular assertions, and is written with conscientious regard for qualification and detail—often most painfully so. It brings no easy solution to the riddle of the universe, and offers no texts for pulpit orations. But the discerning will regard it as a notable contribution to constructive philosophy.

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## DISCUSSION

### SECONDARY QUALITIES AND SUBJECTIVITY

IN a recent communication,<sup>1</sup> Professor Morris Cohen challenges a commonplace remark which I had found occasion to repeat; viz., that science regards the secondary qualities of matter as subjective, in order to avoid the seeming contradiction of describ-

<sup>1</sup> This JOURNAL, Vol. X., page 27.

ing one and the same object as "really" possessing simultaneously all the incongruous qualities which at any given moment appear in the perception of different percipients—such qualities as "long and short, square and oblong, hot and cold, red and gray," etc. Two objections to this are raised by Professor Cohen.

1. "Is there," he asks, "a science which actually treats secondary qualities as subjective?" The answer is, of course, yes. Neither physicists nor physiologists are wont to think of the specific sensible *quale* which we call a sweet taste as a property inhering in a lump of sugar irrespective of its relation to a sentient organism. The sugar is commonly represented by them as having *some* qualities which *are* independent of that relation; but literal sweetness *an-und-für-sich* is not, apparently, a conception which these sciences find it convenient to use. So, again, writers on optics regularly distinguish between the "subjective and objective phenomena of light"; it must therefore be presumed that they believe that there are phenomena of the former sort. Once more, when a physicist writes that "the distinction between radiant heat and light is non-existent," he manifestly does not mean that the distinction between heat-sensation and color-sensation is non-existent; he is speaking of an objective heat and light which, being identical, are by a plain implication represented as other than the two sensations, which are not identical.

That the answer to Professor Cohen's question must be affirmative is so obvious that it clearly must be quite another question which he really has in mind. His context indicates what this other question is, namely: Does science "use the category of subjectivity to explain *why* the same object appears long and short, square and oblong, etc."? But this question is ambiguous. If it means, Can not science in all cases dispense with the notion of subjectivity in explaining this type of fact? the answer is negative. If, however, it means, Does science in so explaining rely solely upon his notion? the answer again is negative. Whenever what is supposed to be one object is perceived differently by different percipients, science customarily assumes some *objective* difference (of primary qualities) between the two cases, *e. g.*, a difference, as Professor Cohen puts it, in the physical or physiological sensoria of the two organisms. But this difference is not, by any science which keeps its wits about it, supposed to be completely identical with the difference between the two sensations; it is merely treated as the external occasion and counterpart of the latter difference. A sensation is what it is at the moment experienced as; and a sensation of red color is *not* experienced either as an ether-undulation or as a (mere) change of relative positions or of energy-relations of particles within the retina. Accordingly, the qualitative *difference* between a sensation of red and

one of green is not described or designated, not to say "explained," by mentioning quantitative differences between two ether-undulations or between two types of motion or of energy-distribution in the retina. Science, in short, correlates all qualitative differences between the secondary attributes of physical things with quantitative differences stated in terms of the primary attributes; but it does not thereby reduce the one to the other. And if it is to make this correlation work satisfactorily, it has need to assume a realm of merely subjective appearances, to which the being of the former class of qualities and of differences may be assigned.

2. Why does it need this assumption? Professor Cohen's second objection touches the reason offered for this necessity. The assumption that the same object "can not really and in itself," "at the same moment" be long and short, etc., seems to him "a most unwarranted assumption." This does not appear to mean that Professor Cohen scorns the principle of contradiction, but only that he finds no more contradiction in the cases mentioned than in the fact that "the same line may subtend an angle of  $45^\circ$  from one point and of  $23^\circ$  from another." But there seems to be here a rather curious disregard of the familiar distinction between the relations and the qualities of a thing. It is commonly admitted (though to Plato even this involved some difficulty) that a thing may sustain a given relation to one object, and the contrary of that relation to another object. But it is also usually supposed by common sense and by most of our science, that every real thing has, besides its relations, a "nature" or character or set of qualities of its own; in short, that to have relations, you must first have a somewhat to be related; and that the "nature" of the somewhat can not consist in a combination of reciprocally contradictory predicates. Professor Cohen's second question, therefore, seems to lack point, unless it involves the assumption that the universe consists exclusively of relations, without any things related. If this be his meaning, I can not share his confidence that the issue he raises "can be readily settled," and settled in favor of the position which he takes. The discrepancies between the perceptions of different percipients, in the presence of the same object, amount to contradictions just so long as the several perceptions are taken as equivalent to qualities inhering in the object. It is for that very reason that they are regarded by science as due to the diverse relations between the object and the several percipients; since, as has been mentioned, in the case of relations such discrepancies are possible without logical contradiction. But why, it may be asked, is this relativity of the secondary qualities further construed as equivalent to their subjectivity? Why may not these predicates of the object be relational and yet objective? Chiefly because *as ex-*



*perienced* certain of them are not at all like what we mean by relations. As immediately given, a red color, a heat-sensation, a sweet taste, though it may involve accompanying ideas or feelings of relation, itself bears no resemblance to a relation. It is an eminently substantive part of our experience. The situation, then, is this: There are items in perceptual experience which can not be called relations. But also they can not be called qualities inhering in the perceived object independently of its relations to percipients; for to call them all so would be to describe the object in contradictory terms. Hence, science regards these items as *caused by*, as functions of, the diverse relations sustained by the object at any given moment to diverse percipient organisms, yet not as existentially identical with those relations. Since these qualities in their own proper character, then, exist neither as qualities of the object nor as mere relations, they must exist in some other manner; and this other manner of existence is called subjective. Such seems to be the underlying logic of the ordinary dualism of primary and secondary qualities.

Professor Cohen, in concluding his note, adds: "the impression that consciousness is necessary in order to explain the facts of illusion seems to me to rest on demonstrably false logic." I hope very much that he may soon find time to furnish the demonstration. I can't quite suppose that he believes it to be furnished by the sentence which follows: "To resort to consciousness as an explanation of the facts of error and hallucination is precisely the same kind of procedure as to invoke the faculty of memory to explain the fact that some of us forget things so readily." Surely, for one thing, the parallel here is not altogether happily chosen. For it does, after all, seem necessary to assume the *existence* of memory in order to conceive forgetting as possible; those who have no such faculty can scarcely be said to forget. But this aside, Professor Cohen's remark leads one to suppose that the point of the argument from perceptual error has not yet been fully appreciated by him. That argument, in brief, is that there are data in people's experience which can not without self-contradiction be supposed to exist as things in a single, coherent world of extended objects, and which also can not be—all of them at once—qualities of the single objects to which they seem to belong; and which yet are not actually experienced as relations *between* objects; and that, accordingly, we must conclude that *these* data at least exist *only* in the one context in which they indubitably exist, namely, in the experience of individual minds—and are to be excluded from the supposed single, external world of "public and

neutral" objects. The pertinency to this argument of Professor Cohen's reference to memory and forgetting remains to me obscure.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Themis: A Study of the Social Origins of Greek Religion.* JANE ELLEN HARRISON. *With an Excursus on the Ritual Forms Preserved in Greek Tragedy* by PROFESSOR GILBERT MURRAY and a *Chapter on the Origin of the Olympic Games* by MR. F. M. CORNFORD. Cambridge: University Press. 1912. Pp. xxxii + 559.

Miss Harrison, already well known to students of Greek religion by her "Prolegomena to the Study of Greek Religion" and other publications, now presents an elaborate (though confessedly incomplete) discussion of its origins, which abundantly merits and is sure to receive the attention of scholars. No doubt many who are not scholars will read and quote it as authoritative, a contingency assiduously to be guarded against by all competent judges. Is then the book so bad or so dangerous? some one will ask. No; it is neither. Rather it is what the ideal book must be—not authoritative, but suggestive; and unless she would belie the conclusion of her admirable booklet, "The Religion of Ancient Greece," Miss Harrison must be the last to wish her latest study to be accepted in any other spirit.

In her ample Introduction our author defines the relation of the present book to her "Prolegomena" and acknowledges her obligations to those whose influence contributed chiefly to the change in her point of view. It is to Professors Bergson and Durkheim that she owns her greatest debt: to the former, for the conception of "*durée*, that life which is one, indivisible and yet ceaselessly changing"; to the latter, for the conception of collective and individual representations. "These two ideas," she says (p. ix), "(1) that the mystery-god and the Olympian express, respectively, the one *durée*, life, and the other the action of conscious intelligence which reflects on and analyses life, and (2) that, among primitive peoples, religion reflects *collective* feeling and *collective* thinking, underlie my whole argument and were indeed the cause and impulse of my book. I felt that these two principles had altered my whole outlook on my own subject, and that, in the light of them, I must needs reexamine the whole material—a task at present only partially achieved."

The material for a study of Greek religion, as even a casual glance at Gruppe's "Manual" will show, is in itself sufficiently appalling; when in addition thereto we consider the data of anthropology in their rapidly increasing bulk, as Miss Harrison invites us to do, the mass threatens to become quite unmanageable. Through this primeval forest, or rather rank thicket, our volume leads us far afield by devious paths and no-paths, and even an experienced indagator might at times lose his bearings did

not our author with a woman's sense of propriety graciously sketch in her Introduction the course of her inquiry. This sketch it is not necessary here to repeat and it absolves the reviewer from himself undertaking the task. Instead, it will suffice to draw attention to the leading ideas of the book.

The "Hymn of the Kouretes," discovered some years since at Palaiakastro in Crete, offers the point of departure. The Kouretes invoke not the Father of God and Men, but the Greatest Kouros, the projection of a rite of initiation into the group or thiasos, the central ceremony of which is the enaction of the new birth into the tribe. The rite or *dromenon* is the magical *re-acting* or *pre-acting* of the second-birth in order to induce it. The Kouros is the embodiment of the thiasos or group, and the individual member of the group is, *quâ* member, the Kouros himself in virtue of his participation in the rite or collective life of the group. Thus the Kouros dies and is born anew with each representative Kouros or member. The Kouros is a daimon. Now a most common form of the daimon is the Year-daimon, the fertility-spirit, representing the vicissitudes of the year with the birth, death, and rebirth of vegetation. At this point is inserted the discussion of the Dithyramb, as the song of the new-born spring, and of the drama, as issuing from the Dithyramb and centering in the thiasos or choros.

Collective action is attended with collective emotion, objectified as magical power, and known among savages as Mana, Orenda, Wakonda, among the Greeks by the names μένος, θυμός. Various ceremonies, such as the Thunder-rites and the Omophagia, confer or create this magical power; it is this connection in which one must consider sacramentalism and kindred subjects. The daimon fully functions in the group alone; he may by degrees be so far projected from the group that he becomes partially individualized as a hero. Just in so far, however, as the hero or the mystery-god retains a thiasos or continues in the consciousness of the group to function as its representative, does he resist the process of trajection into another sphere separate from men. Various offices, functional in character, mark him as in communion with his votaries, notably that of the fertility-daimon, represented by the serpent. Complete extrusion from the group relegates the hero or the daimon to Olympus, and he becomes a God, immortal and exalted beyond the reach of human vicissitudes attended with joy or sorrow. The daimon "worketh until now," whereas the high Olympians dwell at ease.

"Whatever the differences between the religion of the Eniautos (year)-daimon and that of the Olympians, the forms of both these religions depend on, or rather express and represent, the social structure of the worshipers. Above the gods, supreme, eternally dominant, stands the figure of Themis. She is social ordinance, the collective conscience projected, the Law or Custom that is Right" (p. xvii).

Now, what shall we say of this account of the origin of Greek religion, of all religion? Probably no serious student will deny that our author's point of view has justified itself in its application as a point of view, and a suggestive and fruitful one. It is no news that man is a social animal



and that as such the social complex which objectifies and crystallizes his social nature must play a leading rôle as indicator of the hidden currents of his life. Then, too, since customs and institutions are notoriously tenacious of life, especially such as "religious" rites which are invested with a high degree of sanctity, they often afford us the earliest glimpses of man. But, either one must hold that "social" is coextensive with man's nature; or, if not, one must be prepared to show that it is only as social that man has a religion at all. Failing this, the thesis advanced by our author must fall to the ground. Now, there are some troublesome facts which need to be disposed of before one may cheerfully adopt this thesis. If man's nature be completely social, one wishes to know how individuality may ever emerge. And if religion is a product of human life *quâ* social, it should logically remain forever at the stage marked by the consciousness of the utterly homogeneous group. But in that case we should have neither hero, nor mystery-god, nor Olympian—in other words, no evolution at all. If, as our author says, the form of religion depends on, or rather expresses and represents, the social structure of the worshipers, and this is an exhaustive account of the facts, then we must either expect the form of religion to change *pari passu* with the social structure and assert that a given social structure can express itself in only one form of religion, or else we must introduce untold quibbles and refinements such as the evolutionist in general employs when he talks glibly of the adaptation of the organism to the "environment." It is to be feared that the phenomena of religion will refuse to be pigeonholed in so summary a fashion. The Greek worshiper of the Olympian was also in thousands of cases the worshiper of a daimon; indeed, according to the best accounts, nearly or quite all the Olympians were at the same time daimons, though not all daimons were identified with Olympians. Are we then to halve the worshiper in the very act of worship? All this results from too hasty generalization and the error of simplifying the problem overmuch. Thus the individual and the group are too sharply contrasted, and it is assumed that the sense of group-solidarity necessarily precedes individualism. Possibly, and if you please, probably, in the total scale of human evolution it did precede, though the evidence is hardly conclusive. Such evidence as can be adduced will, however, be furnished as much by psychology, human and animal, and by child-study, as by the historical and anthropological investigation of the social structure. Yet, granted that this is true in the total line of development, it does not exclude the ever recurrent shifting of the current of social life from one pole to the other; and oftentimes the same stimulus brings about apparently opposite effects. Thus mysticism and rationalism are notoriously twins, not only occurring simultaneously, as when Orphism and Ionian rationalism flourished side by side, but meeting in the same individual, as they have met in nearly all the great mystics.

If there were space one might readily enlarge upon these general criticisms and show by reference to the history of social and philosophical development how ill suited our author's thesis is to explain all the facts.

Turning to the details of the volume, it should be said that, with all

its dash and brilliancy, it is extremely sketchy, and often, even in matters central to its theme, suggests that its author has not found it worth while to consider the data in detail. Thus when it appeared the writer assumed that it was in some sort parallel to Professor Hirzel's "Themis, Dike und Verwandtes"; so far, however, is this from being true, that Miss Harrison does not appear to have known of its existence, although, to say the least, the astounding wealth of material it contains for the study of Themis and Dike affords a ready means of fairly testing her conclusions.

To many readers the most interesting and valuable portion of the book will doubtless seem to be Professor Murray's excursus on the ritual forms preserved in Greek tragedy. Here, at any rate, are data which every student of the drama must consider, whether he be interested chiefly in the structural technique of this art-form or in the moot question of its origin. Professor Murray appears to be wholly under the spell of Miss Harrison in regard to his general theory. Indeed, the writer in this particular instance, as in many others in the volume, is happy to find himself in perfect agreement with her. But it may be instructive, as affording an illustration of the fact that the social group does not yield the only key to such questions, to note that very much of what Professor Murray and Miss Harrison have to say in regard to the drama was said *mutatis mutandis* from the psychological point of view in the writer's essay, "Die Bekehrung im klassischen Altertum,"<sup>1</sup> in which the *dromena* of the mysteries and the drama were compared with the typical phenomena of "conversion" as revealed by the researches of Professor James and others.

Already too much space has been taken. In conclusion let it be repeated that as a rapid raid made into a large field, the present study is suggestive and illuminating, if accepted at its true worth, which is that of the application of an important but (if regarded as exclusive) one-sided point of view to a body of phenomena infinitely complex.

W. A. HEIDEL.

WESLEYAN UNIVERSITY.

*Lectures on Moral Philosophy.* JOHN WITHERSPOON. Edited by VARNUM LANSING COLLINS. Princeton, N. J.: Princeton University Press. 1912.

This attractive little volume is the first of a proposed series of reprints of the works of early American philosophers. The series was projected by the American Philosophical Association and is to be published under its auspices by the institutions with which the authors of the works chosen were affiliated.

Besides the lectures on moral philosophy this volume contains a check list of forty-one titles of the published works of President Witherspoon and an introduction by the editor, Professor Collins.

The introduction is chiefly biographical. It presents a very interesting picture of the early president of Princeton, who was also an important figure in early American history, as well as a prominent leader in the re-

<sup>1</sup> *Zeitschrift für Religionspsychologie*, Bd. III., Heft 11, 1910.



organization of the Presbyterian Church in America. His personal characteristics and his wide influence are briefly touched upon.

The "Lectures on Moral Philosophy" are in reality little more than a syllabus which President Witherspoon used in his classes. They were not intended for publication and they were preserved only in copies made by his students.

Witherspoon's importance for students of philosophy depends on his successful advocacy of the Scottish philosophy and not upon his own contributions. A tendency toward idealism on the part of the younger members of the Princeton faculty was promptly stamped out by the new president. The philosophy of common sense supplanted it and soon established itself as the dominant philosophy in America. The lectures present this philosophy as it was held and promulgated by a strong, energetic, and practical man. They cover a wide range of topics. The main subdivisions are ethics, politics, and jurisprudence. The discussion of ethics includes a statement of his general philosophical position. The discussion of politics covers both domestic and civil society. The law of nature and of nations receives a brief treatment, and various legal conceptions are associated with the discussion of jurisprudence. The value of the work is of course almost entirely historical.

Both the editorial work and the printing are excellent.

ADAM LEROY JONES.

COLUMBIA UNIVERSITY.

*Ethics.* G. E. MOORE. The Home University Library. New York: Henry Holt and Company. Pp. 256.

The aim of this small volume is to present to laymen the outline of the author's "Principia Ethica" in such a manner that it will serve not merely to acquaint readers with Mr. Moore's own theory, but also to introduce them to the science of ethics. To the reviewer, the former and less important purpose seems to have been fulfilled more skilfully than the second. Mr. Moore leads into his subject through an analytical description of utilitarianism. Having designated the fundamental presuppositions and inferences of this hypothesis, he criticizes them. The one upon which he concentrates is the assertion that the moral judgment simply expresses the speaker's feelings toward the matter judged and does not point out an objective character of the latter. Fully one third of the book is filled with an elaborate disproof of this opinion, which, as Mr. Moore rightly says, is much more widely held than utilitarianism is. Follows next a brief discussion of the tests of right and wrong. Here Mr. Moore analyzes the three theories which maintain that the moral predicate is determined respectively by the intrinsic nature of the act, or by the agent's motive, or by the probable consequences of the act; and he ends with the persuasion that none of these theories is well grounded. There remain two short chapters, one on free will, which ends only with a doubt, and one on intrinsic values, which gives voice to the author's most striking tenets. Many things, he tells us, are intrinsically good; their quality



does not depend at all upon the agent's attitude toward them, nor upon his feelings; and they possess no character peculiar to themselves.

While the reviewer heartily agrees, in the main, with Mr. Moore's pluralistic objectivism, he does not admire the mode of its presentation. Frequently the analyses are altogether too minute and subtle for the general reader to whom the book is addressed. Also, they have crowded out every account of typical ethical theories other than utilitarianism. And, worst of all, they are presented abstractly and illumined with no simple empirical illustrations. All this is unfortunate, in view of the intrinsic merit of the book.

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

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## JOURNALS AND NEW BOOKS

PHILOSOPHICAL REVIEW. September, 1912. *Philosophy in Germany in 1911* (499-526): OSCAR EWALD. - Points out an increasing interest in metaphysics. Reviews current German contributions to philosophy, including the addresses of Külpe, Leonard Nelson, and Graf Keyserling at the fourth International Philosophical Congress; the publications of Bruno Bauch, Kelsen, Reininger, Victor Kraft, Vaihinger, Rickert, Lask, Ebbinghaus, and Hans Driesch; with accounts, from German translations, of the philosophy of Boutroux and Bergson. *The Problem of Time in Recent French Philosophy. III. Time and Continuity: Pilon, James* (pp. 527-545): ARTHUR O. LOVEJOY. - Pilon and Bergson start from the same premises, but reach opposite conclusions concerning the nature of time. Pilon's doctrine affords solutions of the three chief difficulties of temporalism. James gives three accounts of time, tending finally to accept one agreeing with Pilon's. *Professor Bosanquet's Logic and the Concrete Universal* (pp. 546-565): GEORGE H. SABINE. - The second edition of Professor Bosanquet's *Logic* has important additions which concern the contemporary philosophical movements, realism, pragmatism, pluralism, anti-intellectualism. The present article is a review of Professor Bosanquet's criticism of these various movements. *Hegel's Criticisms of Fichte's Subjectivism. I.* (pp. 566-584): EDWARD L. SCHAUB. - Singles out and estimates seven different interpretations of Fichte's fundamental principle. Proposes in a subsequent paper to show that the Hegelian principle of the concrete identity of subject and object is not that of Fichte. *Reviews of Books* (pp. 585-604): William McDougal, *Body and Mind: A History and Defense of Animism*: GEORGE M. STRATTON. Karl Vorländer, *Kant und Marx*. Johann Plenge, *Marx und Hegel*: R. M. MACIVER. A. D. Lindsay, *The Philosophy of Bergson*. J. M. Kellar Stewart, *A Critical Exposition of Bergson's Philosophy*: EVANDER BRADLEY MCGILVARY. F. C. S. Schiller, *Formal Logic: A Scientific and Social Problem*: RADOSLAV A. TSANOFF. *Notices of New Books. Summaries of Articles. Notes.*

Henderson, Lawrence J. *The Fitness of the Environment*. New York: The Macmillan Company. 1913. Pp. xv + 317. \$1.50.

Nathan, Marcel; Durot, H.; Gobron; and Friedel. *Les Arriérés Scolaires*. Paris: Librairie Classique Fernand Nathan. 1913. Pp. vi + 361. 5 fr.

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## NOTES AND NEWS

At the meeting of the Aristotelian Society on March 3, Professor L. P. Jacks read a paper on "Does Consciousness Evolve?" The difficulty that presents itself in the idea of an evolution of consciousness is that the ends which are being evolved must be in consciousness from the first, while, if the mind is conscious of them all to begin with, there can be no evolution. The difficulty is generally met by a wholly illegitimate compromise. The mind is represented as at first neither totally unconscious nor completely conscious of the ends to be evolved. Along with a clear consciousness of the stage already reached, the mind is said to have a dim consciousness of the stages to come. In this we may detect the psychologist's fallacy, which consists in treating a consciousness of what is dim as though it were a dim consciousness of what is clear; a consciousness of an evolving world as though it were the evolving consciousness of a world; a consciousness of low gods (or goods) as though it were a low consciousness of high gods. In short, "consciousness of degrees" is converted into "degrees of consciousness," and the idea of development becomes the development of the idea.

At the annual meeting of the Western Philosophical Association at Northwestern University, Evanston, Illinois, on March 21 and 22, the following papers were read: "Mill's Theory of Objectivity," T. F. Crawford; "Subjectivism and the Doctrine of Coherence," E. L. Schaub; "An Objective Criterion for Judging Conduct," E. B. Crooks; "Bergson's Intellect and Matter," C. E. Cory; "The Bent Stick," W. L. Raub; "A Realistic View of the Criterion of Truth," E. B. McGilvary; "Nature and Human Nature," H. B. Alexander; "Voluntarism and the Criterion of Truth," H. W. Wright; "Objectivity and Truth and Error," A. W. Moore; "Reality and the New Realism," H. M. Kallen; "Euler's Circles and Inversion," A. W. Mitchell; "Epistemology from the Angle of Physiological Psychology," G. D. Walcott. The session on the morning of March 22 was devoted to a joint meeting with the Western Psychological Association, at which the following papers were presented: "The Basis of Internationalism," E. L. Talbert; "Judgments as to Motives of Group Actions," W. D. Scott; "The Social Implications of Consciousness," Warner Fite; "A Point of View for Social Psychology," R. H. Gault; "The Social Self," G. H. Mead. The presidential address was given by Professor J. E. Boodin.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### JURISPRUDENCE AS A PHILOSOPHICAL DISCIPLINE<sup>1</sup>

THE philosophy of law has been an integral part of the great philosophical systems; but in common with other special fields of philosophy, such as the philosophy of history, it is now with us fallen into utter neglect.<sup>2</sup> While general interest in it can be revived only by constructive work, which will demonstrate that this ancient field can still be cultivated to bear a rich harvest, the aim of this paper is to remove some of the ground on which the prevailing apathy in regard to this subject seems to be based.

First, let us consider the view that law is a special field requiring technical knowledge, and that only the lawyer can deal with it. This is an objection which can be brought also against the philosophy of nature, and yet many of us feel that the philosophy of nature is a legitimate field of inquiry for others as well as for technical physicists,—witness our courses on the philosophy of nature, philosophy of evolution, etc. Then again in all of our colleges philosophers teach ethics. Are we ready to admit that a man need have no special knowledge of the world to teach ethics? A philosophy of law is an indispensable part of any system of social ethics; and it may well be that a good deal of the futility of modern ethics-teaching is due to its separation from what used to be called natural law. Individual ethics seems to treat terms apart from their relations. There can be no doubt, at any rate, that the significance of most ethical issues becomes apparent only if they are writ large and made principles of social legislation.

<sup>1</sup> Read at the meeting of the American Philosophical Association, New York, December, 1912.

<sup>2</sup> I am referring only to the Anglo-American situation, and more particularly to the latter. In Scotland and Italy the philosophy of law has always maintained itself, and in Germany and France there is to-day a vigorous revival of interest in this subject led by such men as Stammler, Joseph Kohler, Tarde, Charmont, and Saleilles. See Vol. II. of Berolzheimer's "Rechts- und Wirtschaftsphilosophie" (now translated in the Continental Legal Philosophy series under the title, "The World's Legal Philosophies"). Cf. Professor Pound, *Harvard Law Review*, Vol. XXV., pages 147-168.



There are signs, however, that if the prevailing tendency continues, ethics will soon cease to be a philosophical study and will be abandoned to the department of sociology, anthropology, or perhaps history. It becomes, therefore, necessary to reckon with this prevailing attitude which would restrict philosophy to such formal problems as the relation of mind or thought to reality.

The view that philosophy must keep its skirts clean of any contact with the matters of fact treated in the empirical sciences is one that the most modern schools share with the older Hegelians. But whereas the Hegelians, in their endeavor after a comprehensive rational system, went on to survey all the fields of human interest, and under the guise of deduction frequently brought forth a good deal of fruitful generalization or insight, the modern tendency has been eliminating all concrete material issues from philosophy, and has reduced it to a purely formal discipline intended to give us a formal definition of reality.<sup>3</sup>

This modern attitude, I have tried to show elsewhere,<sup>4</sup> grows out of the division of labor in our American universities, and the requirements of academic courtesy. But as nature, according to Fresnel, does not care about our analytic difficulties, it may be that the universe does not run entirely for the convenience of academic administration. Be that as it may, it can, I think, be shown that, even from the narrowest conception of philosophy, the philosophy of law is still extremely useful, and that an acquaintance with general jurisprudence would enrich our discussion and teaching of logic, epistemology, and metaphysics.

To begin with, it might be shown that many chapters in the history of philosophy are unintelligible without a knowledge of the philosophy of law. Such are, for instance, the Aristotelian and Stoic conceptions of nature and its laws, the complexion of the Leibnizian monadology, or the doctrine of the *Summum Bonum* in Kant. But this would require treatment beyond the limits of this paper. I must confine myself to more obvious points.

A. *Logic*.—In spite of centuries of complaints of the futility of formal logic, there seems to be no tendency to give it up,—not even on the part of its most aggressive critics like Mr. Schiller. How then can we enrich it?

Now the law is the only social institution that is mainly a deductive system, or employs predominantly the logic of subsumption. Instead, therefore, of using such elementary biologic propositions as "all men are mortal" it would seem that we could use more significant material from the realm of jurisprudence. The laws of evidence

<sup>3</sup> *Philosophical Review*, Vol. XII., pages 370 ff.

<sup>4</sup> This JOURNAL, Vol. VII., pages 401 ff.

are supposed by Mill to be of the essence of logic, but neither Mill nor any other logician has thought it worth while to examine the field of jurisprudence to see how the laws of evidence have actually been worked out under the pressure of life's demands. I venture to think that few logicians would find themselves unenlightened by the reading of Thayer's "Preliminary Treatise on Evidence" and his account of the genesis of our modern rational system of legal proof. Any one who is inclined to belittle the importance of definition in a deductive system will be surprised to learn how many actual transactions of daily life depend on the definition of such terms as possession or person. Even such a time-worn, threadbare topic as the logical formation of concepts receives new vigor and importance when applied to the legal field by such writers as Korkunov.<sup>5</sup>

*B. Epistemology and Metaphysics.*—Consider how much our controversy over the nature of truth have been enriched if, instead of our easy dichotomous division of propositions into the true and false, we had taken notice of what lawyers call legal fictions. Such propositions occur, for instance, when we say that the constitution is the will of the people, or that the judges simply declare and never make the law, or when we say that the innocent purchaser of a chattel subject to mortgage has had notice of this fact if only the mortgage is duly recorded. These propositions like the statement of the actor, "I am thy father's spirit," are not adequately characterized when we say merely that they are true or that they are false. To distinguish the sense in which they may be said to be true from the sense in which they are undoubtedly false, is a significant inquiry which seems to me to throw a great deal of light on the central problem of the new realism, viz., the problem of the categories. The study of these fictions also throws light on the nature of such scientific hypotheses as those of the ether. It is curious that the only two writers who have considered fictions, Vaihinger in his "Philosophie des Als Ob" and Von Meinong in his book on *Annahmen*, have both failed to treat of the logic of legal fictions.

We hear a good deal nowadays about intellectualism and anti-intellectualism, and I am not sure that I understand the precise point at issue. But if intellectualism means the tendency to reify or hypostatize relational concepts, *i. e.*, treat all concepts as of unchangeable entities which are independent of any context into which they enter, then there is no field which better illustrates the trouble with this vicious kind of intellectualism than the field of law.

The end of law, the administration of justice, can not be accomplished by empiricism, *i. e.*, by letting the judge decide each case on its merits. Such a hand-to-mouth existence will not do; for people

<sup>5</sup> Korkunov, "General Theory of Law," section 64.

must know with some degree of certainty beforehand what they may and what they may not do. Hence judges or magistrates must, even in the absence of legislation, be bound by rules, so as to eliminate as far as possible the personal equation and make the law uniform, definite, and certain. This requirement that the law should be rational, *i. e.*, deducible from established principles, compels the law to assume the form of a deductive science. But this deduction soon becomes an end in itself and is frequently pursued in flagrant contradiction with the ends of justice. Thus there results what Professor Pound has called mechanical jurisprudence, *i. e.*, a jurisprudence in which deductions are made from concepts without taking into account the question whether changing conditions have made them no longer applicable. A distinguished jurist, Windscheid, speaks of "the ancient, never-ending dream that there is a peculiar rigid and unchangeable body of legal rules which follow from pure reason and are necessary for all times and all places."<sup>6</sup> It is this false intellectualism which under the guise of natural rights is in the United States to-day stifling all progressive social legislation.<sup>7</sup>

The most cogent argument for pragmatism or instrumentalism that I know of (I speak as a friend, not as a member of the family) is an article by Professor Pound.<sup>8</sup> Professor Pound does not seem to know of any pragmatists in Columbia University, and the JOURNAL OF PHILOSOPHY, published in the same University, seems never to have noticed this or any other article of Professor Pound—a significant comment on the efficiency of our modern university organization in the making of knowledge communicable.

While law thus forcibly and vividly illustrates the dangers of intellectualism, the philosophy of law even more than the philosophy of mathematics will prove a corrective to that myopic and stingy empiricism, or sensationalism, which can not conceive anything to be real except sensible entities that have a position in time and space. The slightest reflection on the nature of legal rights or obligations, our debts, or our property if we have any, will show that these are real in any sense in which the word real is worth anything. The

<sup>6</sup> Rectoral Address, page 7.

<sup>7</sup> That this vice is not exclusively modern may be seen from Aristotle's "Politics." According to the Greek law if a plaintiff claimed 20 minæ when but 18 were proved to be due him, there was no course but to find for the defendant. The proposal of Hippodamus, "a strange man," to correct this and allow a verdict for the amount proved due, does not meet with the approval of Aristotle, who adds the following gem of intellectualism: "A judge who votes acquittal decides, not that the defendant owes nothing, but that he does not owe the twenty minæ claimed." ("Pol.," II., 8. 1268 B 15.)

The only answer to this kind of intellectualism is to be found in legal history. See Ames, *Harvard Law Review*, Vol. XXII., page 97.

<sup>8</sup> "Mechanical Jurisprudence," *Columbia Law Review* of 1908.



contingent right of the shareholder to receive a dividend, if there will be one, may in the open market fetch more than the chairs, desks, tables, or bedposts which seem to be all the furniture at the philosopher's disposal.

These possible services of jurisprudence to philosophy may seem trifling; but is not a purely formal philosophy—O tell it not to the Philistines—a magnificent piece of trifling? The sense of it must come to all of us who receive students fresh from some laboratory exercise or from a heated discussion in political science and set them to solve the problem of the "real chair." I do not mean to belittle the importance of the patient scientific work which is now being done on these formal or logical problems. On the contrary, I regard it as of no less importance than any of the researches carried on to-day in the physical or social sciences; for philosophy has always been the intellectual instrument-maker for the sciences, or at any rate the sharpener of the weapons used in all intellectual combat. But the sharpener of tools can not carry on his business without some knowledge of the uses to which the tools are put; or to put it in more orthodox language, the analytic work of examining and criticizing fundamental concepts and methods of science can not be carried on without a *Weltanschauung* or at least a system of values; and in any *Weltanschauung* or system of values the philosophy of law must be an integral part.

There seems to be a widespread conviction to-day that philosophy can at best be only a reflection on the world and by no possibility an instrument for its reform or transformation. In the oft-quoted words of Hegel, "Philosophy can not teach the world what it ought to be. It comes too late for that. . . . The owl of Minerva takes its flight only when the shades of night are gathering."<sup>9</sup> The history of the Hegelian philosophy itself is the best disproof of this view. For under the form of Marxian economics, or economic history, the Hegelian dialectic has, for good or for evil, been the most powerful influence in the political life of the last fifty years, just as Benthamite individualism was the most powerful influence in shaping English law and legislation of the nineteenth century.<sup>10</sup>

I confess I never realized the significance of Comtean positivism until lately, when in reading the history of Mexico and of other Latin-American countries I had occasion to learn the extent to which the conflict between scholasticism and positivism had been carried into the educational, legal, and political life of those countries.<sup>11</sup>

<sup>9</sup> Hegel, "Philosophy of Right" (tr. Dyde), page xxx.

<sup>10</sup> See Wilson, "The History of Modern English Law," and Dicey, "Law and Public Opinion in England."

<sup>11</sup> For bibliographic references, see Valverde Tellez, "Bibliografía Filosófica Mexicana."

Everyone here present, I presume, is generally acquainted with the history of the Aristotelian and Stoic doctrine of natural law, how it was carried into Roman law and used to mitigate the rigor of slavery, how it became the intellectual weapon of the people against the claims of popes and emperors, how in the hands of Grotius it proved a powerful instrument for the mitigation of the barbarities of war, or in the hands of American judges has become a powerful influence for the defense of property against the claims of society or of the working classes.<sup>12</sup>

To the objection which will of course be made, that ideas have no real influence in social development, that they are merely the clothes in which the dominant interests array themselves, I can only answer dogmatically that this narrow economic interpretation of history illustrates Professor Perry's fallacy of exclusive particularity. Because economic forces do undoubtedly have a large share in determining history it does not follow that everything else is uninfluential. One can easily point out instances in the law of trusts or partnerships where judges have been influenced by tradition, sentiment, or the exigencies of a received system even against the interests of the class which they represent.<sup>13</sup> The American doctrine of the independence of the judiciary, or of government by three coordinate branches, is to-day the bulwark of our economically regnant classes, but it originated as a matter of fact in certain logical considerations in Aristotle and was copied into the American Constitution, not because of any class interests, but because of the "imposing" character of the learning in Montesquieu's book on the "Spirit of Laws."

In our reaction against the old despotic claim of philosophy as the absolute ruler and dictator to all human investigations, we have gone to the other extreme and have put it in the position of a useless servant. To this servile period of philosophy there must succeed a period of genuine cooperation between philosophy and the special sciences. This cooperation is becoming easier because the various sciences are beginning to outgrow their juvenile fear of philosophy, and are no longer so effectively frightened by the bogey of metaphysics. This is happening not only in mathematics, physics, chemistry, and biology,—witness Russell, Poincaré, Duhem, Ostwald, Driesch, etc.—but also in jurisprudence.

When, under the influence of British empiricism, conscious philosophy of law was almost ridiculed out of existence, the door was left open for the antiquated individualistic natural rights philos-

<sup>12</sup> On the history and influence of "natural law," see Pollock, "The Expansion of the Common Law," lect. 4, and *Journal of the Society for Comparative Legislation*, 1900, pages 418 ff. Under the form of the *jus gentium* it occurs even in Bracton. (De Legibus, etc., lib. I., ch. 2, fol. 9a.)

<sup>13</sup> See Pound, *Harvard Law Review*, Vol. XXV., pages 166-168.

ophy of the eighteenth century, as embodied in text-books like Blackstone. As narrow empiricism always terminates in vicious intellectualism, so the pseudo-philosophy of Blackstone with its ante-evolutionary view of society and of an unalterable standard of justice, has gained sway over the minds of our lawyers and judges, with the result of making our administration of justice a national scandal.

Through the efforts of thoughtful jurists like Professors Wigmore, Pound, and others, the American Association of Law Schools at its annual meeting in 1910 officially recognized the necessity of a conscious philosophy of law as a way out of the *impasse* into which we have got by pseudo-intellectualism and the empirical manipulation of cases. The committee appointed by that Association, finding no English or American philosophy of law, has planned to translate a series of important continental works on this subject; and four volumes have already been published. In their general preface the committee begins with the Platonic dictum, "Until either philosophers become kings or kings philosophers states will never succeed in remedying their shortcomings." "And if," continue these lawyers, "he was loath to give forth this view, because as he admitted it might sink him beneath the waters of laughter and ridicule, so to-day among us it would doubtless resound in folly if we sought to apply it again in our own field of state life, and to assert that philosophers must become lawyers or lawyers philosophers, if our law is ever to be advanced into its perfect workings. And yet there is hope, as there is need among us to-day, of some such transformation."

"Without some fundamental basis of action, or theory of ends, all legislation and judicial interpretation are reduced to an anarchy of uncertainty. It is like mathematics without fundamental definitions and axioms. Amid such conditions no legal demonstration can be fixed even for a moment. . . . Even the phenomenon of experimental legislation, which is peculiar to Anglo-American countries, can not successfully ignore the necessity of having social ends" (p. v).

To cooperate with the American Association of Law Schools in this essential task of philosophy, to examine anew the problem of social ends in relation to law and morals and the life of civilization, would, I believe, be one of the most effective services which our Association can render to our national life as well as to the vitality of philosophic study. This will undoubtedly mean our taking up empirical facts which we have regarded as belonging to alien fields. But it is precisely this readiness to take up facts from alien fields that has made the various physical sciences fruitful. Perhaps philosophy is the only profession that has not lately been raising its standard of prerequisite general knowledge. We have been directing our efforts almost exclusively to the refinement of our methods, but



it seems to me we need also the introduction of new material. The vitality of philosophy can not continue if it adheres to the ideal of a monastic or sterile celibacy, but rather

“All the past of Time reveals  
A bridal dawn of thunder peals  
Wherever Thought hath wedded Fact.”

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## THE DEFINITION OF CONSCIOUSNESS

THE definition of consciousness is one of the questions that will not down. For philosophical theory it is a sort of shibboleth; in psychology it is a ghost that walks at the most inopportune moments, however carefully it may have been buried underneath our working hypotheses and methodological postulates. There is perhaps no more reliable indication that a profound change is taking place in our philosophical attitude and modes of thought than the persistent endeavors to formulate a definition of consciousness. In view of the fact that the question is of a fundamental character and that general opinion regarding it is in a state of flux, no apology seems to be necessary for making another attempt at clear thinking on this difficult topic.

In the interests of brevity I shall adopt at the outset the assumption of naïve realism that things exist at times when they are not objects for any finite consciousness. The suggestion lies close at hand that the nature of consciousness will be revealed by a comparison of things as they are when not experienced with things as they are when presented to consciousness. But, as Berkeley pointed out long ago, all the choir of heaven and furniture of earth is idea the moment such a comparison is attempted. While this does not prove that all existence is mental, it does indicate a difficulty of procedure which must be kept in view at all stages, if our inquiry is to bear fruit. The difficulty is simply that we can not set down side by side the experienced and the non-experienced, in order to take stock of the difference between the two. That this is done surreptitiously in many of the definitions of consciousness which have been put forth, there is good reason to believe. Theology and epistemology have conspired to induce a habit of mind which shuts us in to the notion of consciousness as a mechanical, detachable entity. While the doctrine that consciousness is a peculiar kind of existence, alongside of, yet “separated by the whole diameter of being” from physical reality is rapidly passing into history, the mode of thinking

of which this doctrine is the expression is with us yet, a mute witness to the discrepancy between what we believe and what we think we believe.

This limitation of procedure constitutes the problem of consciousness a peculiar puzzle. Whether we identify consciousness with the entire field of what we experience or with some specifiable element within this field, we seem to encounter an insuperable difficulty. If the whole situation is to be called consciousness, the "object" or "real" must necessarily lie beyond, and must by definition remain inaccessible. On the other hand, if consciousness is restricted to some element within the field, so that the distinction between consciousness and object falls within the experienced situation, we have at once the difficulty that consciousness and object are never given in separation from each other. The difference between "in" consciousness and "out" of consciousness must be recognized and in some way the two must be compared with each other. But the comparing must be done within the conscious field. How to go beyond consciousness without going beyond it is the embarrassing question. From this familiar blind alley, filled with the *débris* of discarded epistemological theory, there seems to be no possibility of escape.

It seems, then, that our analysis must be confined to the experiential situation and that this circumstance precludes in advance the possibility of finding a consciousness at all. As a matter of fact, the work done here has been peculiarly barren of results, so far as a consciousness *an sich* is concerned, although it may lead, and has led, to a wealth of material of a biological and psychological kind. Instead of consciousness, we find ourselves dealing with reactions of an adaptive sort, instinctive, habitual, and intelligent or experimental. We learn little that is unequivocally consciousness as distinct from things, but we learn much about stimulus and response, about attention and habit, about conflict and adjustment. It is not difficult, therefore, to understand and sympathize with the tendency to regard the problem of consciousness as a pseudo-problem and to identify consciousness frankly with a type of behavior.

Such identification, however, has undeniably the appearance of paradox. Apparently the original question has been permitted to disappear from view. After all, the difficulties of the question are no justification, as the German saying is, for pouring out the baby with the bath. The identification of consciousness with behavior looks like playing with words. If it is to justify itself, the behavior in question is not to be interpreted as a set of muscular contractions, but must be construed in such a way as to include a relationship to

things. A watch, for example, may be studied in a variety of ways, but until it is studied with reference to its function of keeping time, many things pertaining to the "behavior" of the watch necessarily escape us. Certain adaptations of part to part in the mechanism appear only when considered in relation to cosmic processes which go on outside the watch. Similarly the behavior of the body which is identified with consciousness must be brought into relation with facts pertaining to the object<sup>1</sup> of which there is consciousness, or the identification is nonsense. But if this be the case, the body is no more important for the comprehension of consciousness than the object, and the possibility suggests itself that consciousness may be defined as readily in terms of the object as in terms of the organism. Granted that both are necessary for an understanding of the nature of consciousness, a definition that indicates the part played by the object is likely to be the less paradoxical, as also to bring out with greater clearness what is distinctive in this point of view.

The conditions of our problem have now been determined. A definition of consciousness must be based on an analysis of what is experienced; not on a comparison of the experienced with the unexperienced. In other words, consciousness must not be regarded as a distinct entity or kind of existence, for this implies that the nature of consciousness is to be ascertained by a comparison of presence and absence on the part of this entity. This is a procedure that is condemned by the whole history of the subject. Secondly, the definition must take its clue from the relationship of bodily organism and object, a relationship in which the changes of the organism are properly correlated with certain corresponding changes on the part of the object.

These conditions at once precipitate a difficulty. That objects as perceived, for example, vary with certain changes of the body is too trite a matter to be argued; every case of opening and closing the eyes or of shifting the point of view is an illustration of the fact. These changes, however, are not supposed to be changes in the object, but in our perceptions of them. That is, the same object is found to have different qualities under different conditions, but this does not tell us what changes in the object are correlated with the bodily behavior which is involved in consciousness. The perceived qualities vary in the sense that we have different perceptions of the objects; they do not seem to vary in the sense that the objects themselves are to be regarded as in a state of flux and varying concomitantly with the changes in the perceiving body. The object is supposed to be fixed, and the changes which occur, in so far as they relate to per-

<sup>1</sup> The word object, it may be noted, is used here as equivalent to the entire situation or complex.



ception, are attributed to changes in the relation of the body to the object, not to changes in the object itself.

At this point the suspicious reader will perhaps anticipate a metaphysical dissertation on fixity and change in objects. My purpose, however, is rather to direct attention to a peculiarity of objects which furnishes empirical evidence that the notion of fixity rests on an abstraction. This peculiarity we find discussed in our psychologies under the heading of the "margin" or the "fringe" of consciousness. "Every definite image in the mind," says James, "is steeped and dyed in the free water that flows round it. With it goes the sense of its relations, near and remote, the dying echo of whence it came to us, the dawning sense of whither it is to lead. The significance, the value, of the image is all in this halo or penumbra that surrounds and escorts it—or rather that is fused into one with it and has become bone of its bone and flesh of its flesh; leaving it, it is true, an image of the same *thing* it was before, but making it an image of that thing newly taken and freshly understood."<sup>2</sup>

In his discussion of this topic James says that it is "the reinstatement of the vague to its proper place in our mental life which I am so anxious to press on the attention."<sup>3</sup> All experiences have their focus and margin, hence the vague pervades the whole of our mental life. It should be noted, however, that these experiences are vague, not in themselves, but with reference to their leadings or implications. When seen in retrospect, this peculiar mode of being may be construed as tendencies, premonitions, nascent images, etc., but it is only with reference to some standpoint other than itself that it can be called vague. While it is true that psychologists have frequently attempted to reduce the fringe to sensory material of various kinds, it seems to be reasonably evident that these sensory elements merely repeat the situation, unless we bring the regress to an end by postulating elements which are neither experienced nor experienceable. We seem, therefore, forced to the conclusion that in order to give a consistent interpretation to objects, it is necessary to ascribe to them a character which, apart from the goal to which it leads or the function which it performs, escapes formulation and defies description. If objects are fixed with reference to our perceptions, this indescribable character becomes an ultimate fact, which can not be brought into relation with other facts. In this case the attempt to define consciousness appears to be hopeless. If, however, we construe it in terms of process and function, the way seems open to interpret consciousness as a correlation between bodily processes and changes in the object.

<sup>2</sup> "Psychology," Vol. I., page 255.

<sup>3</sup> *Ibid.*, page 254.

According to this view, the reason why consciousness presents a problem of such peculiar difficulty is that we ordinarily approach it with false preconceptions regarding the nature of experience. If we fail to utilize that phase or character of things which consists wholly in this peculiar, dynamic relationship to other things, the problem is apparently insoluble. Our analysis in this case finds objects of various kinds, but never consciousness. We come upon physical things, images, concepts, pains, and desires in endless variety, but throughout we are harassed by the knowledge that these are objects of which we are conscious, and not the consciousness that we seek. If we then put in an awareness as an additional element or constituent, it is merely in order to meet this demand for a consciousness, and not in response to a mandate from introspection or to the requirements of theoretical consistency. The puzzles and contradictions which result, whether we leave out consciousness altogether or place it in mechanical juxtaposition to its objects, are impressive evidence that there is an error in the starting-point. We have left out what James calls the "continuity of consciousness," or the "fringe"; by which expressions he means to designate a peculiar character of objects, which invariably slips through our fingers when we attempt to lay hold of it in description.

That a correlation exists between this "total character" of objects and physical responses, there seems to be no good reason to doubt. James's brilliant presentation of the fringe, it will be remembered, includes a discussion of cerebral conditions. This correlation takes the form of behavior, if we adopt the view that the function of the brain is simply to coordinate response. Since this "total character" of objects with which the behavior is correlated is in the nature of a reference or relationship that faces the future, the behavior in question differs from other forms of behavior in that it is intelligent and not mechanical. Moreover, this total character or fringe has endless shadings and is never twice the same; from which we may infer that the correlated behavior is not determined by fixed connections in the nervous system, but makes its appearance at the point where instinct and pure habit are inadequate. Consciousness, then, has to do with this particular correlation; it is guidance or control through this peculiar foreshortening or "implication"; or to put it more briefly, albeit metaphorically, consciousness is the margin or fringe.

If we thus identify consciousness with the fringe, however, it must not be overlooked that the entire significance of the contention rests on the view that the fringe is not a detachable appendage, is not even something other than the object to which it belongs, but is

a purely metaphorical designation for the "total character" previously discussed.<sup>4</sup> It appears, moreover, that what James says about the knower or the "passing thought" is of fairly direct application to consciousness. We may say of consciousness that its present moment is the darkest in the whole series, that it is always the knower, and not the known, that it is born an owner and dies owned—provided that these statements be construed with reference to this peculiar relationship of the present object to other objects. James's own theory of consciousness, which identifies consciousness with objects in so far as they appear in a certain context or setting, is open to criticism on the ground that it leaves this total character of objects altogether out of account. It distinguishes physical and psychical, a distinction which does not concern the character of things as mediating future experiences, but it does not distinguish consciousness and object. If we identify the two distinctions, we are unable to correlate consciousness with a type of behavior, and we have no explanation of the fact that we are as much conscious of the physical as of the psychical. As Woodbridge says, "The differentiation simply divides the field of consciousness into two parts, but does not isolate a separate field in which alone consciousness is found. Physical objects just as much as personal histories may be objects in consciousness. . . . The differentiation in question thus appears simply to reveal between our *objects* one of the distinctions of which we are conscious."<sup>5</sup>

This view of consciousness may be harmonized, as a little reflection will show, with Woodbridge's definition of consciousness as meaning. But in order to harmonize the two, it is necessary to interpret meaning in such a way as to avoid the objection that meaning "would seem to be the relation characteristic of *discursive* consciousness rather than consciousness in general."<sup>6</sup> Meaning taken in a discursive sense is as much object as anything else. We are

'It is evident that if consciousness be identified with the fringe, *i. e.*, with a relationship of things to something in the future, a relationship which is organic and vital to things and yet distinctive of the situations in which they occur, the term object, when used as contrasted with consciousness, and not as inclusive of the fringe, must be defined more narrowly. This is not the occasion to enlarge on this topic, but it may be suggested that the "object," in this case, corresponds to the focus, as distinct from the margin. It is a name for the "restingplaces" or the "substantive parts"; it designates both the *terminus a quo* and the *terminus ad quem* of the experiential flux. Or we may say that the object properly designates the factor of control in the experiential flux, whereas the fringe designates the factor of control with respect to the bodily organism.'

<sup>4</sup> JOURNAL OF PHILOSOPHY, Vol. II., page 124, 1905. Italics mine.

<sup>6</sup> Perry, "Present Philosophical Tendencies," page 278..



conscious of meanings as we are conscious of other things. The discursive sense, it seems, is precisely the sense in which the word is *not* to be taken, if the definition is to prove itself tenable; and for this reason the use of the term in the definition is a matter of doubtful propriety. But this is primarily a matter of words. Consciousness is a kind of implication; it is an aspect or mode of objects which, when viewed retrospectively and in terms of its temporal culmination or realization, may be called a form of connection among objects, a connection by way of representation or meaning. If we distinguish, as Woodbridge does, between objects and consciousness, it would seem to follow that meaning as known, as an object, is not the meaning that is intended when consciousness is defined as meaning.

A word or two may be added with reference to the realistic definition of consciousness as a form of togetherness or unique grouping of objects. Those who advance this definition seem to place the principle of grouping more or less explicitly in the relation of the experiential complex to the bodily organism. So far we can agree. The definition fails, however, to give any clue to the nature of that relation. It does not select a specific character or aspect of objects with which to correlate organic response, and unless this is done the criterion has significance only when applied from the outside and through the agency of a bystander. What is needed is a specific kind of response which can be contrasted with other kinds and can be properly correlated with objects. In order to do this, however, we must reinterpret objects and endow them with a character the significance of which realism is wont to ignore.

If the view here presented is a defensible interpretation, we are enabled to treat consciousness as a correlation and to deal with it wholly in experiential terms. We can explain why consciousness is so unobtrusive, and also in what sense it may be experienced. The total character or fringe is easily made object—and thus endowed with a fringe of its own—if we take a situation where we are confronted with some difficulty, such as recalling a forgotten name. We find ourselves here with a gap that “swims in a felt fringe of relations,” an “aching gap,” and the peculiar, evanescent sense of something which almost is and yet is not. Similarly, when we introspect for the self we come upon a “warmth and intimacy” which tantalizes and baffles us until it resolves itself into the feeling of certain bodily adjustments. In still another type of situation, when the observer is peacefully aware that he is conscious of an object, the total character or fringe has an undeveloped implication pertaining to various relations between the object and the body, such as the effect of closing the eyes, shifting the point of view, etc. And finally

we may say that to distinguish between consciousness and object, or to recognize that an object existed prior to our experience of it, is not to assume a comparison between the experienced and the unexperienced, but is to deal with the "meaning" of things, a meaning which must be construed in terms of the fringe on the one hand and of bodily control on the other.

As was intimated previously, the significance of this treatment of consciousness lies in the interpretation which it gives to experience. The pragmatic movement of our day is, above all, an attempt to reinterpret philosophic problems in the light of this conception. It holds out the hope that many difficulties which so far have resisted explanation will be overcome when approached from this new standpoint.

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### INTERESTING THEOREMS IN SYMBOLIC LOGIC

TWO propositions in the algebra of implication or "calculus of propositions" have been much discussed. They are: "A false proposition implies any proposition," and "A true proposition is implied by any proposition." These theorems have been hailed as discoveries and repudiated as absurdities. But on all sides the impression seems to prevail that these two are *sui generis* in the algebra. For this reason, it may be worth while to present a partial list of propositions which are of the same kind, involve the same principles, and can be proved from the same assumptions. Comparatively few such theorems have been printed, but their number is apparently infinite. Reference, following the proposition, indicates those given in "Principia Mathematica."<sup>1</sup>

1.  $q \supset (p \supset q)$  (\*2.02). A true proposition is implied by any proposition.

2.  $\sim p \supset (p \supset q)$  (\*2.21). A false proposition implies any proposition.

3.  $p \supset (\sim p \supset q)$  (\*2.24). If  $p$  is true, then not- $p$  implies any proposition.

<sup>1</sup>The notation is that of "Principia Mathematica" with some modifications.  $p, q, r$  represent propositions.  $\supset$  symbolizes "implies."  $\sim$ , placed before a letter or expression, is the sign of negation.  $\sim p$  may be read "not- $p$ " or " $p$  is false." Similarly  $p$  may be read as written or as " $p$  is true." The product  $pq$  means " $p$  and  $q$  are both true";  $\sim p \sim q$ , " $p$  and  $q$  are both false," etc.  $+$  is the sign of disjunction.  $p + q$  is read "either  $p$  is true or  $q$  is true." For the sake of clearness, I render the main implication sign in each theorem by "if . . . then," subordinate implications by "implies."

4.  $\sim (p \supset q) \supset (\sim p \supset q)$  (2·5). If  $p$  does not imply  $q$ , then not- $p$  implies  $q$ .

5.  $\sim (p \supset q) \supset (p \supset \sim q)$  (\*2·51). If  $p$  does not imply  $q$ , then  $p$  implies not- $q$ .

6.  $\sim (p \supset q) \supset (\sim p \supset \sim q)$  (\*2·52; misprinted, note proof). If  $p$  does not imply  $q$ , then not- $p$  implies not- $q$ .

7.  $\sim (p \supset q) \supset (q \supset p)$  (\*2·521). If  $p$  does not imply  $q$ , then  $q$  implies  $p$ .

8.  $\sim (p \supset q) \supset p$ . If  $p$  does not imply  $q$ , then  $p$  is true.

9.  $\sim (p \supset q) \supset \sim q$ . If  $p$  does not imply  $q$ , then  $q$  is false. 8 and 9 are even more startling than 1 and 2, from which they are proved by the rule  $(p \supset q) \supset (\sim q \supset \sim p)$ .

10.  $\sim (p \supset q) \supset p \sim q$ . If  $p$  does not imply  $q$ , then  $p$  is true and  $q$  false.

11.  $pq \supset (p \supset q)$ . (\*3·4). If  $p$  and  $q$  are both true, then  $p$  implies  $q$ .

12.  $pq \supset (q \supset p)$ . If  $p$  and  $q$  are both true, then  $q$  implies  $p$ .

13.  $pq \supset (\sim p \supset q)$ . If  $p$  and  $q$  are both true, then not- $p$  implies  $q$ .

14.  $pq \supset (\sim q \supset p)$ . If  $p$  and  $q$  are both true, then not- $q$  implies  $p$ .

15.  $\sim p \sim q \supset (p \supset q)$ . If  $p$  and  $q$  are both false, then  $p$  implies  $q$ .

16.  $\sim p \sim q \supset (q \supset p)$ . If  $p$  and  $q$  are both false, then  $q$  implies  $p$ .

17.  $\sim p \sim q \supset (p \supset \sim q)$ . If  $p$  and  $q$  are both false, then  $p$  implies not- $q$ .

18.  $\sim p \sim q \supset (q \supset \sim p)$ . If  $p$  and  $q$  are both false, then  $q$  implies not- $p$ .

19.  $\sim pq \supset (p \supset q)$ . If  $p$  is false and  $q$  true, then  $p$  implies  $q$ .

20.  $\sim pq \supset (p \supset \sim q)$ . If  $p$  is false and  $q$  true, then  $p$  implies not- $q$ .

21.  $\sim pq \supset (\sim q \supset \sim p)$ . If  $p$  is false and  $q$  true, then not- $q$  implies not- $p$ .

22.  $\sim (p \vdash q) \supset (p \supset q)$ . If it is false that "either  $p$  is true or  $q$  is true," then  $p$  implies  $q$ .

In 22 the  $\sim p \sim q$  of 15 is replaced by its equivalent,  $\sim (p \vdash q)$ . Three more such theorems result from a similar substitution in 16, 17, and 18.

23.  $\sim (\sim p \vdash \sim q) \supset (p \supset q)$ . If it is false that "either  $p$  is false or  $q$  is false," then  $p$  implies  $q$ .

23 results from substituting  $\sim (\sim p \vdash \sim q)$  for  $pq$  in 11. Three more theorems result from a similar substitution in 12, 13, and 14.

24.  $\sim (\sim p \vdash q) \supset (\sim p \supset q)$ . If it is false that "either  $p$  is false or  $q$  is true," then not- $p$  implies  $q$ .

24 results from substituting  $(\sim p \vdash q)$  for its equivalent,  $(p \supset q)$ ,



in 4. Three more theorems result from a similar substitution in 5, 6, and 7.

The above are the simplest of the theorems of this character which involve only the terms,  $p$ ,  $q$ ,  $\sim p$  and  $\sim q$ . Without increasing the number of terms, more complex theorems of the same sort can be proved, apparently without limit. A few of the simpler theorems involving a third proposition sign,  $r$ , are as follows:

25.  $\sim (p \supset q) \supset (r \supset p)$ . If  $p$  does not imply  $q$ , any proposition  $r$  implies  $p$ .

26.  $\sim (p \supset q) \supset (q \supset r)$ . If  $p$  does not imply  $q$ ,  $q$  implies any proposition  $r$ .

27.  $\sim (p \supset q) \supset (\sim p \supset r)$ . If  $p$  does not imply  $q$ , not- $p$  implies any proposition  $r$ .

28.  $\sim (p \supset q) \supset (r \supset \sim q)$ . If  $p$  does not imply  $q$ , then any proposition  $r$  implies not- $q$ .

29.  $(p \supset q) \supset [p \supset (r \supset q)]$ . If  $p$  implies  $q$ , then  $p$  implies that any proposition  $r$  implies  $q$ .

30.  $(p \supset q) \supset [p \supset (\sim q \supset r)]$ . If  $p$  implies  $q$ , then  $p$  implies that not- $q$  implies any proposition  $r$ .

31.  $(p \supset q) \supset [\sim q \supset (r \supset \sim p)]$ . If  $p$  implies  $q$ , then not- $q$  implies that any proposition  $r$  implies not- $p$ .

32.  $(p \supset q) \supset [\sim q \supset (p \supset r)]$ . If  $p$  implies  $q$ , then not- $q$  implies that  $p$  implies any proposition  $r$ .

33.  $\sim (p \supset q) \supset [r \supset (q \supset p)]$ . If  $p$  does not imply  $q$ , then any proposition  $r$  implies that  $q$  implies  $p$ .

34.  $\sim (p \supset q) \supset [r \supset (\sim q \supset p)]$ . If  $p$  does not imply  $q$ , then any proposition  $r$  implies that not- $q$  implies  $p$ .

35.  $\sim (p \supset q) \supset [r \supset (p \supset \sim q)]$ . If  $p$  does not imply  $q$ , then any proposition  $r$  implies that  $p$  implies not- $q$ .

The addition of a fourth proposition sign constitutes a vocabulary sufficient for Alice in Wonderland. But consideration for the reader—and the printer—requires that we make an end.

Any one of these theorems can be proved from the postulates of "Principia Mathematica," from those of Peano, from Schröder's, and from any of the sets given by Huntington. They can also be proved, in somewhat different form, from the assumptions of Mrs. Ladd-Franklin's algebra, if the variables of that system are taken to symbolize propositions or propositional functions.

What these theorems reveal is the divergence of the meaning of "implies" in the algebra of logic from the "implies" of valid inference. The way in which such theorems came to be included in the "calculus of propositions" is, briefly, this: The calculus of propositions was preceded by and grew out of the "calculus of classes." In the algebra of classes, "all  $a$  is  $b$ " may be interpreted, "all cases of

$a$  are cases of  $b$ ," or "all cases in which  $p$  is true are cases in which  $q$  is true,"—hence, finally " $p$  implies  $q$ ." But the implication relation—when " $p$  implies  $q$ " means " $q$  can be inferred from  $p$ "—fails to be analogous to the relation of class inclusion in more ways than have yet been noticed. Many of the above theorems can be interpreted as propositions in the algebra of classes, and when so construed become intelligible and true. Most of them will then be disclosed as results of the two conventions, (1) the zero or empty class is contained in every class, and (2) every class is contained in the universe of discourse. These are the exact analogues of (1) a false proposition implies any proposition, and (2) a true proposition is implied by any proposition. In order successfully to symbolize valid inference, the algebra of implication needs radical revision.

The consequences of this difference between the "implies" of the algebra and the "implies" of valid inference are most serious. Not only does the calculus of implication contain false theorems, but all its theorems are *not proved*. For the theorems are implied by the postulates in the sense of "implies" which the system uses. The postulates have not been shown to imply any of the theorems except in this arbitrary sense. Hence, *it has not been demonstrated* that the theorems *can be inferred from* the postulates, even if all the postulates are granted. The assumptions, *e. g.*, of "Principia Mathematica," imply the theorems in the same sense that a false proposition implies anything, or the first half of any of the above theorems implies the last half. The postulates of the "Principia" imply the "consequences" thereafter set down in exactly the same fashion that "Socrates was a solar myth" implies "All triangles have two or more sides."

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Meaning of God in Human Experience: A Philosophic Study of Religion.* WILLIAM ERNEST HOCKING. New Haven: Yale University Press. 1912.

This is an interesting and important book. It is interesting because of its subject, for it deals with the central theme both of philosophy and religion, the meaning of God in human experience. It is interesting because of its method, for it is at all points the work of a fresh, original thinker, dealing at first hand with his subject, and bringing to each question which he faces at once a wide knowledge and an open mind. It is interesting, finally, because of its conclusion, for the line which the author's thought follows leads him away from the beaten track of contem-

porary philosophy and brings him to a position which, if not unique, is at least unusual.

The book, it may be said at the outset, is not an easy one to read. This is due in part to the style, which is singularly uneven, now suggesting Carlyle in the ornateness of its rhetoric, and again speaking the sober and exact language of science. A greater difficulty is the lack of a clear and concise summary of the writer's argument. In the discussion of isolated points, interesting and fruitful as they are, one is not always conscious of their bearing upon the central theme. This is particularly true when Professor Hocking assumes the rôle of expositor. He enters so intelligently into his opponents' thought and states their arguments with such inner sympathy that one finds oneself more than once on the point of yielding assent to some position, only to find his guide shifting his ground and beginning to argue on the other side.

But these difficulties lie on the surface. The reader who follows Professor Hocking to the end will find himself richly repaid. The author deals with real questions. He brings to their discussion not only adequate technical knowledge, but personal graces of the spirit. He is a philosopher who is also religious, and he writes with the glow and fervor which true religion always produces in those who experience it. He describes religion from the inside, not from the outside, telling us what it means to the men who have it and never seeking to discredit their witness or to transform it, as has so often been done in discussions of the philosophy of religion, into something so different that they themselves would not recognize it. At the same time he knows his philosophy and brings to the interpretation of his subject that wide acquaintance with the thought of the past which is essential to progress in knowledge. The book abounds in wise insights aptly expressed. Not in many years have we read a book which lends itself so rewardingly to quotation. We would be glad to illustrate this in detail did space permit.

In his preface the author defines his purpose and briefly indicates his own philosophical position. He takes his departure from the general dissatisfaction with the older idealistic treatments of religion which has led so many in our day to seek a positive groundwork for their faith elsewhere. In the lack of clarity to which this effort has thus far led he finds the sufficient warrant for his study. The book inquires "what in terms of experience its God means and has meant to mankind, and it proposes by aid of the labors of all coworkers, critics and criticized alike, to find the foundations of this religion, whether within reason or beyond" (VII.). In other words, what is proposed is a rational study of religion in order to determine whether or no religion be in its essence rational.

Having thus defined his problem, the author proceeds to indicate his point of view, which is mystical as distinct from idealistic or pragmatic. His mysticism is not indeed the negative mysticism which is world-denying, not the "mysticism of mantic and theurgy, mysticism of supernatural exploit, seeking short-cut to personal goods" (XVIII.); rather the mysticism which is implicit in all experience, the mysticism "which lends to life that value which is beyond reach of fact, and that creativity which is



beyond the docility of reason; which neither denies nor is denied by the results of idealism or the practical works of life, but supplements both, and constitutes the essential standpoint of religion" (XVIII.). This mysticism of experience the author further defines by contrast to idealism, on the one hand, and pragmatism, on the other. The weakness of idealism he holds to be its failure to do justice "to the particular and the historical in religion, to the authoritative and the wholly superpersonal" (XI.). Just because it tries to bring everything under one all-embracing category it does not do justice to the actual realities of life. It can not give us an authoritative object existing over against us, commanding the allegiance of the will. It shows, in short, "no adequate comprehension of the attitude of worship" (XI.). Pragmatism, on the other hand, is simply "idealism become more subjective, freedom less bound by authority" (XV.). Useful in pointing out something wrong, it must leave the work of discovering what is right to be done by other means. It may indeed serve as a useful guide to action; it can not point for us the way of truth. For knowledge deals with that which is given, and is impossible without ultimates. The trouble with pragmatism is not that it is empirical, but that it is not empirical enough. "An ultimate empiricism, a deference to what is given, not makable, just in these regions of the supersensible and the supernatural, is an attitude wholly necessary to human dignity and to true religion. Far less than absolute idealism is positive pragmatism (radically taken) capable of worship" (XVII.).

What is sought then in the book is a rational defense of religion which shall vindicate for the religious man what he has always believed himself to find in his religion, first-hand contact with an authoritative object immediately known as the most real and certain of facts.

The book falls into six divisions. The first deals with religion as seen in its effects; the second, with religious feeling and religious theory; the third, with the need of God; the fourth, with the knowledge of God; the fifth, with worship and the mystics; the sixth, with the fruits of religion. It is not possible to follow the course of the argument in detail, and we shall have time only to comment briefly upon the points which seem to us most important. These are, first, the author's conception of the nature of religion; secondly, his view of the place of idea in religion; thirdly, his view of the meaning of the God idea; and finally, his grounds for believing that such a being as God really exists.

Before beginning our comment in detail a word may be said of the order followed. The philosophical discussion which fills Parts II. to IV. is introduced and followed by chapters which describe religion as a fact of experience. We can not but feel that this separation is unfortunate. The materials from which the author draws his conception of religion as an observed fact are not marshaled in any one place, with the result that the reader is often left in doubt as to the ground of the conclusion drawn. The discussion of worship and the mystical experience, as well as of the prophetic consciousness, and other fruits of religion, are really presuppositions of the argument rather than its consequences, and the force of the presentation would have been augmented if all the material dealing with

religion could have been grouped together at the outset. As it is, one has the feeling of a certain abstractness and a *a priori* character in the theoretical discussion which is not really justified.

Taking up in detail the four points referred to, we begin with the author's view of religion. His analysis of the religious experience leads him to note the following three characteristics: In the first place, it involves a fearless and original valuation of things. It is an experience of individual freedom and creativity over against one's environment. In the second place, it is an experience of necessity. The fresh and original judgments of religion seem to the man who possesses them to be not merely his own individual creation, but due to an inner necessity to which he can not but yield. And finally, the religious attitude assumes for the man who has it a certain universal character. What is valid for him he believes to be valid also for all men everywhere. The note of authority is the note of all genuine religion. In these characteristics of combined freedom, necessity, and universality, we have revealed the distinctive nature of religion as an experience, namely, its "present possession of the distant sources of worth and certainty" (p. 31). We may indeed define religion as "the present attainment in a single experience of those objects which in the course of nature are reached only at the end of infinite progression. Religion is anticipated attainment" (p. 31).

This does not mean that the religious man is satisfied to accept his environment as it is. On the contrary, the singular thing about religion is that this experience of possession on the part of the person who has it proves to be a spur to activity. The more intense the personal religious experience, the more marked its effects in society. Religious men in every age have been creators, alterers, turners of the world upside down. Indeed, if one were to seek for a single word which would describe religion, considered as an objective fact in history, it would be the word, creativity. Religion, apparently often without independent content of its own, has been the source of fruitful activity in every sphere of human interest.

This is signally illustrated by the mystical experience, that type of religious life which is commonly regarded as most anti-social and individualistic. Mysticism, Professor Hocking defines as "a way of dealing with God, having cognitive and other fruit, affecting first the mystic's own being and then his thinking, affording him thereby answers to prayer which he can distinguish from the results of his own reflection" (p. 355). It is not, at least since the Pseudo-Dionysius it has not meant to be, a "rival theology," but rather "an experimental wisdom, having its own methods and its own audacious intention of meeting Deity face to face" (p. 355). Mysticism begins with a heightened consciousness of self, a feeling of dissatisfaction with all the relative satisfactions afforded by life as it is. It involves a withdrawal into self, that in solitude the hungry soul may renew its life by contact with the ultimate reality. Herein lies its negative and world-denying character. But the mystic does not stop here; at least, not ordinarily, or in the person of his best representatives. Rather does he turn back to the world, in order that he may live out the new insight which he has thus attained. In actual ex-

perience the mystics have been anything but solitaires. They have been men of affairs, active, resourceful, creative. In their own personal experience they have discovered a profound psychological truth, the truth, namely, that in order to insure the most effective social activity one must from time to time withdraw into oneself for renewal through contact with the primal founts of being. This law of alternation, which Professor Hocking discusses at length in Chapter XXVIII., and of which he finds many illustrations in human experience, is at once the explanation and the justification of worship. To it are due those familiar social fruits of religion, such as prophecy, inspiration, and the like, which he discusses at length in his concluding chapters.

The second point of interest in the book is the author's discussion of the place of idea in religion. How far, he asks, is the current tendency to depreciate the intellectual content of religion justified? How far can we adequately define religion in terms of feeling or of will? How far may we regard the God idea as a by-product which is negligible for the purposes of explaining the origin of religion and accounting for its function?

Professor Hocking answers all these questions in the negative. To him idea is of the very essence of religion because it is implicit in the nature of the religious experience itself. The religious experience is a metaphysical experience in the sense of being an experience of contact with reality. As such it involves an intellectual element which can not be ignored without destroying the experience itself.

The section in which Professor Hocking maintains this thesis contains the freshest and most original work in the book. It is an illuminating discussion of the psychology of feeling in its relation to idea. He discusses the various theories which treat the two in their independence and shows their inadequacy. It is impossible to isolate idea from feeling, for ideas come into existence through our interest in reality. Love of truth is itself a passion rooted in the nature of man, existing in and for itself (p. 123), and conversely feeling never exists by itself, but is always a mark of unstable equilibrium. Feeling is only another name for our search for the idea. Religion, then, is quite in the right in insisting upon dogma. Dogma is only our way of expressing our conviction that in religion we deal with reality, and reality of a necessary and eternal nature. This is why pragmatism, however useful it may be as a guide to truth, can never satisfy us as an ultimate philosophy. "As mature persons we can worship only that which we are compelled to worship. . . . Unless God is that being for whom the soul is inescapably destined by the eternal nature of things, the worship of God will get no sufficient hold on the human heart" (p. 152).

The conclusion, then, to which the author comes in his preliminary study of the nature of religion is this: that "we can not find a footing for religion in feeling, but must look for valid religious ideas. And these ideas are not to be taken at liberty, nor deduced from the conception of any necessary purpose. We are to seek the truth of religion obediently in experience as something which is established in independence of our finite wills" (p. 155).



So we are led to the third point to be noticed, the significance of the God idea. Leaving open for the moment the question of the reality of God, what must God be if he is to do for us what religion requires? Three things at least. In the first place, he must unify our world; secondly, he must furnish us with an absolute standard; and finally, he must be "intimate infallible associate, present in all experience, as that by which we too may firmly conceive that experience from the outside" (p. 224). He must be one, not indeed in the sense of a bare abstract monism, but as supplying that principle of unity that is necessary to a rational optimism, a unity consistent, to be sure, with a relative pluralism, requiring it indeed in order to account for the evil of which we have practical experience, but never elevating this evil to a level with itself, always regarding it as the transitory, the subordinate, that which is ultimately to be overcome. God, then, for religion will be "an individual reality not ourselves, which makes for rightness and which actually accomplishes rightness when left to its own working" (p. 177).

Again, God must be the Absolute, not in the sense of excluding the relative that we know in experience, but as providing the standard by which it is to be judged. So conceived, the Absolute is the most indispensable of all conceptions, to which we are led on purely pragmatic grounds. For action is not interested solely in making differences. It is interested rather "in making improvement, or, in other words, change in a situation which itself is permanent" (p. 186). The very conception of improvement implies a standard, and so brings us face to face with the Absolute. God, then, must be for us a unifying principle and an absolute standard, but above all he must be that intimate personal friend that religion has always affirmed him to be and that the experience of religious men has shown him to be in fact.

At this point the author faces the crux of every religious philosophy, the problem of evil. He considers the ancient dilemma, which Professor McTaggart has recently revived in his book, "Some Dogmas of Religion." Either God can control evil and does not, in which case he is not good, or he would, but can not, in which case he is not God. The author points out that the fallacy in this dilemma lies in regarding evil as something complete in itself apart from its relations; whereas, the characteristic feature of the religious life has been that it has never been willing to accept this conclusion. Religion has never denied the fact of evil. Rather has it intensified it in manifold ways. But it has insisted that evil is not the last word of evil (p. 218). There is a meaning behind evil, a purpose working itself out through it, which makes it worth all it costs, and God as the great Other who gives the key to this meaning is the power by which this transmutation of values is wrought.

From definition we pass to proof. Granting that we have correctly described what religion seeks in its God, how do we know that such a being exists in fact? Here Professor Hocking's answer is very simple. We know God just as we know any other object, by first-hand experience (p. 229). Not indeed that the consciousness of God is everywhere and always explicit, but that even in the simplest religious feeling we have al-

ready implicitly present "idea masses prepared beforehand in some more elemental experience" (p. 233), which in time develop into the great concept we call God. It is not that we come to the God idea at some particular stage of our experience, still less that we reason from this experience to the idea, but that we discover on reflection that which has always been present implicitly from the first. Our knowledge of God here stands on the same basis with all other knowledge, notably with our knowledge of our fellowmen. Indeed, Professor Hocking argues at length to prove that we could not know other persons at all if it were not for this prior possession of a knowledge of God as the standard by which real personal existence is to be tested. In this respect all three of the fundamental objects of our knowledge, God, nature, and our fellowmen, stand on the same level. They are not independent objects of knowledge, but each is involved in and with the others, and our consciousness of the reality of any one stands and falls with our consciousness of the reality of the others. Nature is known to us as real because it is the object of common knowledge by other selves. Selves are known to us as real because they are fellow knowers of a real nature; and nature and other selves are both alike known as real because there is implicitly present in our knowledge of each that great other self whom we call God. From the beginning "God is immediately known, and permanently known, as the other Mind which in creating Nature is also creating me" (p. 297).

If we ask more in detail how we come to the consciousness of this mysterious presence Professor Hocking can give us no clear answer. "Through no historical retracings shall we discover the silent entrance into nature of that presence" (p. 234). Shall we say that we rise to the thought of God from the sense of mystery which primitive man feels face to face with the phenomena of nature and of human life? But before man can feel mystery God must be there already. There is all the difference in the world between the sense of ignorance and the sense of mystery. "The former means, I know not; the latter means, I know not, but it is known" (p. 236). If then we wish to describe "the original source" of the knowledge of God we should have to say that it is "an experience of not being alone in knowing the world, and especially the world of nature. In such an experience—if there be such—would be contained all the possibilities for harm and for good which religion has exhibited" (p. 236).

Holding such views, it is not strange that the one argument for God's existence which has weight for the author is the ontological argument. This to him is not a syllogism of formal logic, but simply a report of experience. It is our way of telling what we actually find in our own experience and trusting the processes which make that report as valid witnesses. If we were to put it in logical form we should have to say, not "I have an idea of God, therefore God exists," but "I have an idea of God, therefore I have an experience of God" (p. 314). In our knowledge of God idea and experience belong together. We could not have the first without the second. In the course of our experience, to be sure, the idea is further developed and gains richness of content from many different sources, but its essential elements are present from the first. The fact that

we have it at all is our guarantee that in religion we are dealing with a reality as real as any of which it is possible for us to conceive.

So much by way of exposition. A word of final estimate. I have spoken of the author's thought as leading him away from the beaten track of contemporary philosophy and bringing him to a position which if not unique is at least unusual. It is none the less true that the book is symptomatic of a certain tendency in current thinking. It springs from the same impulse which has given birth to modern realism, the desire to get away from abstractions and artificialities and to recover contact with the real world as given to us in experience. The originality of Professor Hocking's treatment is found in his insistence upon the fact that the most certain things in experience are not the physical objects that we call things, but those centers of conscious rational activity that we call persons. What he reaches—to use his own words—is “a supernatural realism, or a social realism, or more truly a realism of the Absolute not far removed from absolute idealism” (p. 290). God and the self, or rather the society of selves—these for him constitute the ultimate realities.

We believe that this reminder is timely. It is high time that we realized that no psychology of religion can be scientific which ignores the meaning of religious experience to the man who has it. Writing as a psychologist for psychologists Professor Hocking shows us what this experience implies, and behold, it is metaphysical through and through. Accepting the pragmatist test of usefulness as a clue to reality, he applies it to the object of religious faith and shows that the qualities of inevitableness and finality in the older definitions of God against which pragmatism protests are essential to its adequate functioning in religion. In this we believe that he is entirely right, and in his emphasis upon the pragmatic value of the Absolute for religion will be found the chief merit of the book.

When we pass from this general thesis to the details of the treatment we find ourselves now and again raising a query. Is the God whom we find thus given in experience adequately defined? Admitting that Professor Hocking is right in making place in his definition for the attributes of unity and absoluteness has he done equal justice to other elements which have been central, we will not say in the idea simply, but in the experience of God. One hears little of the qualities of justice and of love which have played so great a part in historic religion. The ethical experience with its consciousness of sin and its sense of brotherhood, is given little or no place either in establishing faith in God or in determining the content of the God idea. One gains the impression as one reads that however much may have entered into the content of the God idea through the great ethical religions it is after all negligible compared with those more general elements which are common to the ethical religions with the natural religions which they have replaced. More than once we hear Professor Hocking saying that it is more certain to the religious man *that* God is than *what* he is (p. 296 *cf.*, p. 317), or using such sentences as this: “In finding God simply existent we find him both good and righteous in his activity, and the condition of so finding him is that



he himself remains above the contrasts of good and evil" (p. 332). Such language in its abstract and *a priori* character is suspiciously suggestive of the absolute idealism which the author repudiates. What has become, one is tempted to ask, of the radical empiricism of which so much was made at the outset? Wherein does the author's attitude toward the concrete and historic in religion differ from, let us say, that of Hegel?

Nor is it only in connection with the content of the God idea that we find ourselves asking questions. In his statement of the grounds of belief Professor Hocking passes lightly over aspects of the religious experience which have seemed to many religious men of controlling importance. One may agree with him that the experience which the ontological argument seeks to express does really lie at the basis of every proof of God. We believe in God not because we can demonstrate his existence by logic, but because faith in him is so indissolubly associated with all the highest values of life that we simply can not conceive of life without him. But in experience this conviction never meets us alone, but always associated with other convictions, intellectual and moral, which clothe it with warmth and content. The God in whom faith rests is never (certainly never at first) the abstract "I am," of whom one can say only that "he is," but the God of strength or of wisdom, or of justice or of love, who has some message to give, some purpose to be fulfilled, some power to display. So the interests which underlie the cosmological, the teleological, and above all, the moral arguments, can never be divorced from the ontological, and the reasoning which (rightly as we believe) endeavors to rehabilitate the one must concern itself with the others also.

The difficulty into which Professor Hocking has fallen at this point is due, we can not but feel, to his failure adequately to estimate, or, at all events, to use the contribution of history to religion. In spite of all that is said about the importance of idea for religion the content of religious belief is lightly touched on, and the difference which separates the historic types of religion dismissed as irrelevant. For Professor Hocking, as for Professor James, the mystic is the typically religious man, and the distinctive contributions of ethics to religion minimized, if not altogether overlooked.

But we would not end upon a note of criticism. We believe Professor Hocking has a real message to the religious thought of our day. We know no book which more adequately diagnoses the weakness of the present religious situation or more clearly points out the needed remedy. We need a philosophy which shall combine the firm grasp of idealism upon the necessary and abiding elements in religion with the keen sense of the concrete and the historic, and above all, the strong ethical interest which characterizes pragmatism. We need a philosophy which shall bring to the study of the religious experience that sober common sense, that respect for fact as fact which gives our new realism its all but religious quality, without making our experience of physical objects our exclusive standard of reality. We need, in short, a philosophy which shall make personality in the sense in which we know it in ourselves, and which is presupposed in the great spiritual experiences of mankind, the most real

thing in the world, the standard by which everything that deserves to be called reality must be tested. Professor Hocking has pointed out this need; he has made a distinct contribution toward meeting it. We trust that his book may lead others to move still farther along the path which he has pointed out.

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## JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. November, 1912. *Consciousness and Object* (633-640): FREDERICK J. E. WOODBRIDGE. — Replies to a former criticism of Professor Thilly. Maintains and further explains the soundness of the two assertions that consciousness marks the difference between an object and the consciousness of the object, and that consciousness has no efficiency. *Implication and Existence in Logic* (pp. 641-665): CHRISTINE LADD-FRANKLIN. — Sets forth the objections to making the phrase, "*p* implies *q*," used by symbolic logicians, typical of pure mathematics. Illustrates the misconceptions arising from following unwarily M. Bertrand Russell by a criticism of Professor Mamin's article, "The Existential Proposition." *Henri Bergson: Personalist* (pp. 666-675): MARY WHITON CALKINS. — A protest against current misinterpretations of Bergson's teaching. "He is claimed, or criticized, as pragmatist or temporalist when, as a matter of fact, he is first and foremost a personalist and idealist of the renaissance spiritualistic school." *Reviews of Books* (pp. 676-700): George Malcolm Stratton, *Psychology of the Religious Life*: GEORGE ALBERT COE. R. M. Wenley, *Kant and his Philosophical Revolution*: ERNEST ALBEE. James Seth, *English Philosophers and Schools of Philosophy*: GEORGE H. SABINE. Borden Parker Bowne, *Kant and Spencer: A Critical Exposition*: EDGAR L. HINMAN. V. Brochard, *Études de Philosophie Ancienne et de Philosophie Moderne*: G. S. BRETT. *Notices of New Books. Summaries of Articles. Notes.*

Allan, Archibald. *Space and Personality*. London: Oliver and Burd. 1913. Pp. xxv + 607.

Walter, Herbert E. *Genetics; An Introduction to the Study of Heredity*. New York: The Macmillan Company. 1913. Pp. xiv + 272. \$1.50.

Weaver, Edward E. *Mind and Health*. New York: The Macmillan Company. 1913. Pp. xv + 500. \$2.00.

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## NOTES AND NEWS

THE New York Branch of the American Psychological Association will meet in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences, on Monday, April 28, at

Columbia University. The following papers will be presented: "Binet Tests in Schools for Incurables in New York City," A. E. Rejall; "Some Individual Differences in Immediate Memory Span," G. F. Williamson; "The Order of Merit Method and the Method of Paired Comparisons," Miss Mabel Barrett; "Effect of Size and Frequency on Permanency of Impression," Dr. E. K. Strong; "A Comparison of the Records of the Criminal Woman and the Working Child in a Series of Mental Tests," Dr. Clara J. Weidensall; "Families of American Men of Science," Professor J. McK. Cattell; "The Influence of Strychnine on Mental and Motor Efficiency," Dr. A. T. Poffenberger.

MR. KIRKPATRICK, of Fitchburg, Massachusetts, announces that, in accordance with his recently outlined plan to secure photographs of psychologists, philosophers, educators, and scientists, on a basis of the demand for them, pictures of psychologists are now being obtained. The demand for photographs of philosophers, educators, and scientists has been very slight, and it is, therefore, urged that requests for these be sent in at once. The photographs will be of the uniform size of eight by ten and it is expected that they will be accompanied by autographs.

A CONFERENCE between teachers of law, social science, and philosophy to discuss the problem of "Law in Relation to Social Ends" has been called for April 25, at the College of the City of New York, and for April 26, at Columbia University, under the chairmanship of Professor John Dewey. Papers on the main topic or on points bearing on the relation of philosophy to law are to be presented.

THE appearance of the two following journals is announced by their publishers: *Jahrbuch für Philosophie und phänomenologische Forschung*, edited by E. Husserl, and published by Max Niemeyer, Halle, and *Die Geisteswissenschaften*, edited by Dr. Otto Buek and Dr. Paul Herre, and published by Verlag von Veit and Company, Leipzig.

UNDER the auspices of the Catholic Summer School of America, an extension course of five lectures was given in New York City by the Rev. William Turner, of the Catholic University of America, on "The Philosophical Errors of the Day."

PROFESSOR JAMES H. TUFTS, head of the department of philosophy in the University of Chicago, was the convocation orator at the eighty-sixth convocation of that institution on March 18. The subject of his address was "The University and the Advance of Justice."

PROFESSOR GEORGE HERBERT PALMER, Alvord professor of natural religion, moral philosophy, and civil polity, and Professor Francis Peabody, Plummer professor of Christian morals, have given their final lectures at Harvard University.

DR. FELIX KRUEGER, professor of philosophy at the University of Halle, and Kaiser Wilhelm professor at Columbia University, lectured on psychological subjects recently at the University of Wisconsin and the University of Illinois.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### CONCERNING MULTIPLE INTERPRETATIONS OF POSTULATE SYSTEMS AND THE "EXISTENCE" OF HYPERSPACE

WHAT do we mean when we speak of  $n$ -dimensional space and  $n$ -dimensional geometry, where  $n$  is greater than 3? The question refers to talk about space and geometry that are  $n$ -dimensional in *points*, for ordinary space, as is well known, is 4-dimensional in lines, 4-dimensional in spheres, 5-dimensional in flat line-pencils, 6-dimensional in circles, etc., and there is naturally no mystery involved in speaking of these latter varieties of multi-dimensional manifolds and their geometries, no matter how high the dimensionality may be. No mystery for the reason that in these geometries everything lies within the domain of intuition in the same sense in which everything in ordinary (point) geometry lies in that domain. In other words, these  $n$ -dimensional geometries are nothing but theories or geometries of *ordinary* space, that arise when we take for element, not the point, but some other entity, as the line or the sphere, . . ., whose determination in ordinary space requires more than 3 independent data. Of these varieties of  $n$ -dimensional geometry, the inventor was Julius Plücker (d. 1868), but Plücker declined to concern himself with spaces and geometries of more than four dimensions in *points*.

Since Plücker's time, however, such hyper-theories of points have invaded not only almost every branch of pure mathematics, but also—strangely enough—certain branches of physical science, as, for example, the kinetic theory of gases. As to the manner of this latter invasion a hint may be instructive. Given  $N$  gas molecules enclosed, say, in a sphere. These molecules are, it is supposed, flying about hither and thither, all of them in motion. Each of them depends on six coordinates,  $x, y, z, u, v, w$ , where  $x, y, z$  are the usual positional coordinates of the molecule regarded as a point in ordinary space, and  $u, v, w$  are the components of the molecule's velocity along the three coordinate axes. Knowing the six things about a given mole-

cule, we know where it is and the direction and rate of its going. The  $N$  molecules making up the gas depend on  $6N$  coordinates. At any instant these have definite values. These values together define the "state" of the gas at that instant. Now these  $6N$  values are said to determine a point in space of  $6N$  dimensions. Thus is set up a one-one correspondence between such points and the varying gas states. As the state of the gas changes, the corresponding point generates a locus in the space of  $6N$  dimensions. In this way the behavior or history of the gas gets geometrically represented by loci in the hyperspace in question.

Is such geometric  $n$ -dimensional phraseology merely a geometric way of speaking about non-spatial things? Even if there exists a space,  $S_n$ , one *may* employ the language appropriate to the geometry of the space without having the slightest reference to it, and, indeed, without knowing or even enquiring whether it exists. This use of geometric speech in discourse about non-spatial things is not only possible, but in fact very common. An easily accessible example of it may be found in Bôcher<sup>1</sup> where, in speaking of a set of values of  $n$  independent variables as a point in space of  $n$  dimensions, the reader is told that the author's use of geometric language for the expression of algebraic facts is due to certain advantages of that language compared with the language of algebra or of analysis; he is told that the geometric terms will be employed "in a wholly conventional algebraic sense" and that "we do not propose even to raise the question whether in any geometric sense there is such a thing as space of more than three dimensions."

It is held by many, including perhaps the majority of mathematicians, that there are no hyperspaces of points and that  $n$ -dimensional geometries are, rightly speaking, not geometries at all, but that the facts dealt with in such so-called geometries are nothing but algebraic or analytic or numeric facts expressed in geometric language. If this opinion be correct, then the extensive and growing application of geometric language to analytical theories of higher dimensionality indicates a high superiority of geometric over analytic speech, and it becomes a problem for psychology to ascertain whether the mentioned superiority is adequate to explain the phenomenon in question and, if it be adequate, to show wherein the superiority resides.

No doubt geometric language has a kind of esthetic value that is lacking in the speech of analysis, for the former, being transfused with the rich reminiscences of sensibility, constantly awakens a delightful sense, as thinking proceeds, of the colors, forms, and motions of the sensuous world. This is an emotional value. No doubt, too,

<sup>1</sup>"Introduction to Higher Algebra," page 9.

geometric language has, in its distinctive conciseness, an economic superiority, as when, for example, one speaks of the points of the 4-dimensional sphere,  $x^2 + y^2 + z^2 + w^2 = r^2$ , instead of speaking of the various systems of values of the variables  $x, y, z, w$  that satisfy the equation  $x^2 + \dots = r^2$ . Additional advantages of geometric over analytic speech are brought to light in the following remarks by Poincaré in his address, "*L'Avenir des Mathématiques*" (1908) :

"Un grand avantage de la géométrie, c'est précisément que les sens y peuvent venir au secours de l'intelligence, et aident à deviner la route à suivre, et bien des esprits préfèrent ramener les problèmes d'analyse à la forme géométrique. Malheureusement nos sens ne peuvent nous mener bien loin, et ils nous faussent compagnie dès que nous voulons nous envoler en dehors des trois dimensions classiques. Est-ce à dire que, sortis de ce domaine restreint où ils semblent vouloir nous enfermer, nous ne devons plus compter que sur l'analyse pure et que toute géométrie à plus de trois dimensions est vaine et sans objet? Dans la génération qui nous a précédés, les plus grands maîtres auraient répondu 'oui'; nous sommes aujourd'hui tellement familiarisés avec cette notion que nous pouvons en parler, même dans un cours d'université, sans provoquer trop d'étonnement.

"Mais à quoi peut-elle servir? Il est aisé de le voir: elle nous donne d'abord un langage très commode, qui exprime en termes très concis ce que le langage analytique ordinaire dirait en phrases prolixes. De plus, ce langage nous fait nommer du même nom ce qui se ressemble et affirme des analogies qu'il ne nous permet plus d'oublier. Il nous permet donc encore de nous diriger dans cet espace qui est trop grand pour nous et que nous ne pouvons voir, en nous rappelant sans cesse l'espace visible qui n'en est qu'une image imparfaite sans doute, mais que en est encore une image. Ici encore, comme dans tous les exemples précédents, c'est l'analogie avec ce qui est simple qui nous permet de comprendre ce qui est complexe."

The question of determining the comparative advantages and disadvantages of the languages of geometry and analysis is a very difficult one. It is evidently in the main a psychological problem. It appears that no serious and systematic attempt has ever been made to solve it. Here, it seems, is an inviting opportunity for a properly qualified psychologist, it being understood that proper qualification would include a familiar knowledge of the languages in question. The interest and manifold utility of such a study are obvious. In the course of such an investigation it would probably be found that the superiority of geometric over analytic speech is alone sufficient to account for the extensive and rapidly increasing literature of what is called  $n$ -dimensional geometry and that, in order to account for the



rise of such literature, it is therefore not necessary to suppose the existence of  $n$ -dimensional spaces,  $S_n$ , the facts dealt with in the literature being, it could be supposed, nothing but analytic facts expressed in geometric language.

If such a result were found, would it follow that  $S_n$  does not exist and that consequently  $n$ -dimensional geometry must be nothing but analysis in geometric garb? The answer is, no; for we may and we often do assign an adequate cause of a phenomenon or event without assigning the actual cause; and so the possibility would remain that  $n$ -dimensional geometry has an appropriate object or subject, namely, a space  $S_n$  which, though without sensuous existence, yet has every kind of existence that may warrantably be attributed to ordinary geometric space,  $S_3$ . For this last, though it is imitated by (or imitates) sensible space, as an ideal model or pattern is imitated by (or imitates) an imperfect copy, it is not identical with it.  $S_2$  is not tactile space, nor visual space, nor that of muscular sensation, nor the space of any other sense, nor of all the senses—it is a conceptual space; and whether there are or are not spaces  $S_4$ ,  $S_5$ , etc., which have every sort of existence rightly attributable to ordinary geometric space,  $S_3$ , and which differ from the latter only in the accident of dimensionality and in the further accident that  $S_3$  appears in the rôle of an ideal prototype for an actual sensible space, whilst  $S_4$ ,  $S_5$ , etc., do not present such an appearance,—that is the question which remains for consideration.

A friend called at my study, and, finding me at work, asked, "What are you doing?" My reply was: "I am trying to tell how a world which probably does not exist would look if it did." I had been at work on a chapter of what is called 4-dimensional geometry. The incident occurred ten years ago. The reply to my friend no longer represents my conviction. Subsequent reflection has convinced me that a space,  $S_n$ , of four or more dimensions has every kind of existence that may be rightly ascribed to the space,  $S_3$ , of ordinary geometry.

The following paragraphs present—merely in outline, for space is lacking for a minute presentation—the considerations that have led me to the conclusion above stated.

Let sensible space be denoted by  $sS_3$ . We know that  $sS_3$  is discontinuous (in the mathematical sense of the term) and that it is irrational. By saying that it is irrational I mean what common experience as well as the results of experimental psychology prove: that three sensible extensions of a same type, let us for definiteness say three sensible lengths,  $l_1$ ,  $l_2$ ,  $l_3$ , may be such that

$$(1) \quad l_1 = l_2, \quad l_2 = l_3, \quad l_1 \neq l_3.$$

Because  $sS_3$  is thus irrational, because it is radically infected with such contradictions as (1), this space is not, and can not be, the subject or object of geometry, for geometry is rational: it does not admit three such extensions as those in (1). Not only do such contradictions as (1) render  $sS_3$  impossible as a subject or object of geometry, but, when encountered, they produce intolerable intellectual pain—nay, if they could not in some wise be transcended or overcome, they would produce intellectual death, for, unless the law of non-contradiction be preserved, concatenative thinking, the life of intellect, must cease. In case of intellect we may say that its struggle for existence is a struggle against contradictions. But mere existence is not the characteristic aim or aspiration of intellect. Its aim, its aspiration, its joy, is compatibility. Indeed, intellect seems to be controlled by two forces, a *vis a tergo* and a *vis a fronte*: it is driven by discord and drawn by concord. Intellect is a perpetual suitor, the object of the suit being harmony, the beautiful daughter of the muses. Its perpetual enemy is the immortal demon of discord, ever being overcome, but never vanquished.

The victory of intellect over the characteristic contradictions inherent in  $sS_3$  is won through what we call conception. That is to say that either we find or else we create another kind of space which, in order to distinguish it nominally and symbolically from  $sS_3$ , we may call conceptual space, and denote by  $cS_3$ . Unlike  $sS_3$ ,  $cS_3$  is mathematically continuous and it is rational. Like  $sS_3$ ,  $cS_3$  is extended, it has room, but the room and the extensions are not sensible, they are conceptual; and these extensions are such that, if  $l_1$ ,  $l_2$ ,  $l_3$  be three amounts of a given type of extension, as length, say, and if  $l_1 = l_2$  and  $l_2 = l_3$ , then  $l_1 = l_3$ . The space  $cS_3$ , whether we regard it as found by the intellect or as created by it, is the subject or object of geometry. The current vulgar confusion of  $sS_3$  and  $cS_3$  is doubtless due to the fact that the former imitates the latter, or the latter the former, as a sensible thing imitates its ideal, or as an ideal (of a sensible thing) may be said to imitate that thing; for it is precisely such alternative or mutual imitation that enables us in a measure to control the sensible world through its conceptual counterpart; and so the exigencies of practical affairs and the fact that reciprocally imitating things each reminds us of the other cooperate to cause the sensible and the ideal, the perceptual and the conceptual, to mingle constantly and to become confused in that part of our mental life that belongs to the sensible and the conceptual worlds of three dimensions. Nevertheless, it is a fact to be borne in mind that  $cS_3$  is a subject or object of geometry and that  $sS_3$  is not.

Now, in order to construct the geometry in question, we start with a suitable system of postulates or axioms expressing certain rela-

tions among what are called the elements of  $cS_3$ . These postulates, together with such propositions as are deducible from them, constitute the geometry of  $cS_3$ . I shall call it *pure* geometry, for a reason to be given later, and shall denote it by  $pG_3$ . For definiteness let us refer to the famous and familiar postulates of Hilbert. Any other system would do as well. In the Hilbert system, the elements are called points, lines, and planes. It is customary and just to point out that the terms point, line, and plane are not defined, and in critical commentary it is customary to add:

(A) That, consequently, these terms may be taken to be the names of any things whatsoever with the single restriction that the things must satisfy the relations stated by the postulates;

(B) That, when some admissible or possible interpretation  $I$  has been given to the element-names, the postulates  $P$  together with their deducible consequences  $C$  constitute a definite theory or doctrine  $D$ ;

(C) That replacing  $I$  by a different interpretation  $I'$  produces no change whatever in  $D$ ;

(D) That this invariant  $D$  is Euclidean geometry of three dimensions; and

(E) That, if we are to speak of  $D$  as a theory or geometry of a space, this space is nothing but the ensemble of any kind of things that may serve for an interpretation of  $P$ .

That the view expressed in that so-called "critical commentary" does not agree with common sense or with traditional usage is obvious. That it will not bear critical reflection can, I believe, be made evident. Let us examine it a little. In order to avoid the prejudicial associations of the terms point, line, and plane, we may replace them by the terms "roint," "rine," and "rane," so that the first postulate, or axiom, as Hilbert calls it, will read: *Two distinct roints always completely determine a rine*. Or, better still, we may replace them by the symbols  $e_1$ ,  $e_2$ ,  $e_3$ , so that the reading will be: *Two distinct  $e_1$ 's always completely determine an  $e_2$* ; and similarly for the remaining postulates.

We will suppose the phrasing of (A), (B), (C), (D), (E), slightly changed to agree with the indicated new phrasing of the postulates.

It seems very probable that there are no termless relations, *i. e.*, relations that do not relate. It seems very probable that a relation to be a relation must be something actually connecting or subsisting between at least two things or terms. A postulate expressing a relation having terms is at all events ostensibly a statement about the terms, and so it would seem that, if the relation be supposed to be termless, the statement ceases to be a statement about something and, in so ceasing, ceases to be a statement that is true or else is false. In



discourse, it is true, there is frequent seeming evidence that relations are often thought of as termless, as when, for example, we speak of "a relation *and* its terms"; but then we speak also of a neckless fiddle without intending to imply by such locution that there can be a fiddle without a neck. As, however, we do not wish the validity of the following criticism to depend on the denial of the possibility of termless relations, the discussion will be conducted in turn under each of the alternative hypotheses: ( $h_1$ ) There are termless relations; ( $h_2$ ) There are no termless relations. We will begin with

#### HYPOTHESIS $h_2$

To (A) we make no objection.

Let us now suppose given to  $P$  some definite interpretation  $I$ . Let us grant that we now have a definite doctrine  $D$ , consisting of  $P$  and  $C$ . Either the things which in  $I$  the  $e$ 's denote have or they have not content, character, or meaning,  $m$ , in excess of the fact that they satisfy  $P$ .

(1) Suppose they have not an excessive meaning  $m$ . Denote the interpretation by  $I_1$  and the doctrine by  $D_1$ . This  $D_1$  is a queer doctrine. We may ask: what does  $D_1$  relate or refer to? That is, what is it a doctrine of or about? The question seems to admit of no intelligent or intelligible answer. For if the doctrine is about something, it is, it seems natural to say, a doctrine about the  $I_1$ -things (denoted by the  $e$ 's); but, by (1), these  $I_1$ -things can not be characterized or indicated otherwise than by the fact of their satisfying  $P$ ; and so it appears that such attempted natural answer is reducible and equivalent to saying (a) that the doctrine  $D_1$  is about the things which it is about. In order not to be thus defeated, one might try to give an informing answer by saying that  $D_1$  is a doctrine, not about the  $I_1$ -things, *i. e.*, not about terms of relations, but about the relations themselves. Such an answer is suspicious on account of its unnaturalness, and it is unnatural because the propositions of  $D_1$  wear the appearance of talking explicitly, not about relations, but about terms of relations. Moreover, the answer is not an informing one unless the relations that the doctrine  $D_1$  is alleged to be about can be characterized otherwise than by the fact of their being satisfied by the  $I_1$ -things, for, if they can not be otherwise characterized, evidently by (1) the answer reduces to a form essentially like that of (a). May not one escape by saying that the relations which  $D_1$  is alleged to be a doctrine about are just the relations expressed by the propositions in  $D_1$ ? Does this attempted characterization make the answer in question an informing one? If  $D_1$  is a doctrine about the relations expressed by its propositions, then  $D_1$  says or teaches some-

thing about these relations, for every doctrine, if it be about something, must teach or say something about that which it is about. In the case supposed, what does  $D_1$  teach about the relations? Nothing except that they are satisfied by the  $I_1$ -things. In other words, what  $D_1$  teaches about the relations expressed by its propositions is, by (1), that these are satisfied by things that satisfy them—a not very nutritious lesson. It is possible to make a yet further attempt so to indicate the relations as to render the answer, that the doctrine  $D_1$  is about relations, an informing one. It is known that  $P$  may receive an interpretation  $I'$  different from  $I_1$  in that the  $I'$ -things do not satisfy (1), but have an excessive content, character, or meaning  $m$ . May we not give the required indication of the relations that  $D_1$  is said to be a doctrine about by saying that they are relations satisfied by the  $I'$ -things, the presence of the  $m$  involved making the indication genuine or effective? It seems so at first. But if again we ask what  $D_1$  teaches about the relations thus indicated, we are led into the same difficulty as above. Moreover, when we ask what  $D_1$  is a doctrine about we expect an answer in terms in somewise mentioned or intimated in the  $D_1$  discourse, whilst in the case in hand the required indication has depended on  $m$ , a thing expressly excluded from the  $D_1$  discourse by (1).

So, I repeat,  $D_1$  is a queer doctrine.

It must be aded that if there be an interpretation  $I_1$ , it is unique of its kind; for if  $I_1'$  were an interpretation satisfying (1), the  $I_1'$ -things would have no excessive meaning  $m$ ; hence they would be simply the  $I_1$ -things, and  $I_1$  and  $I_1'$  would be merely two symbols for a same interpretation.

Accordingly, if there were an interpretation  $I_1$ , but no other, *i. e.*, no interpretation  $I$  in which the  $I$ -things did not satisfy (1), then (C) would be pointless; by (D),  $D_1$  would be Euclidean geometry of three dimensions; and, by (E), Euclidean space, if we wished to speak of  $D_1$  as a geometry of a space, would be the ensemble of the  $I_1$ -things; but, if we wished to characterize the  $I_1$ -things, the elements of Euclidean space, we could only say that they are the things satisfying certain relations, and, if we wished to indicate what relations, we could only say, the relations satisfied by those things: a very handsome circle.

In the following it will be seen that we are in fact not imprisoned within that circle.

(2) Suppose the  $I$ -things of the above-assumed interpretation  $I$  do not satisfy (1), but have an excessive meaning  $m$ . (It is known that such an  $I$  is possible, an example being found by taking for an  $e_1$  any ordered triad of real numbers  $(x, y, z)$ ; for an  $e_2$  the ensemble

of triads satisfying any two distinct equations,

$$A_1x + B_1y + C_1z + D_1 = 0, \quad A_2x + B_2y + C_2z + D_2 = 0,$$

in neither of which the coefficients are all of them zero; and for an  $e_3$  the ensemble of triads satisfying any one such equation; the presence of  $m$  being evident in countless facts such as the fact, for example, that an  $e_1$  is composed of numbers studied by school-boys or useful in trade without regard to their ordered triadic relationship.) Denote the assumed definite interpretation  $I$  by  $I_2$  to remind us that it satisfies (2), and denote the corresponding doctrine by  $D_2$ . It is immediately evident that there is an interpretation  $I_1$  and hence a doctrine  $D_1$ , for to obtain  $I_1$  it is sufficient to abstract from the  $m$  of the  $I_2$ -things and to take the abstracts (which plainly satisfy (1)) for  $I_1$ -things.

Are  $D_1$  and  $D_2$  but two different symbols for one and the same doctrine, as asserted by (C)? Evidently not. For, in respect of  $D_2$ , we can give an informing answer to the question, what is  $D_2$  a doctrine about? Owing to the presence of the  $m$  in the  $I_2$ -things, the answer will be an informing one whether it be the natural answer that  $D_2$  is a doctrine about the  $I_2$ -things, or one of the less natural answers, that  $D_2$  is about the relations having the  $I_2$ -things for terms, that  $D_2$  is about the relations expressed by its propositions; whilst, as we have seen, owing to the absence of  $m$  in the  $I_1$ -things no such answers were, in respect of  $D_1$ , informing answers.

Can not (C) be saved by refusing to admit that there is an interpretation  $I_1$ , and so refusing to admit that there is a  $D_1$ ? If there is no  $I_1$  and hence no  $D_1$ , then (C) is pointless unless there is an  $I_2'$  and so a  $D_2'$  in which the  $I_2'$ -things have an  $m'$  different from the  $m$  of the  $I_2$ -things. But if there is an  $I_2'$  thus different from  $I_2$ , then obviously  $D_2'$  and  $D_2$  are, contrary to (C), different doctrines, for they are respectively doctrines about the  $I_2$ -things and the  $I_2'$ -things, and these thing-systems are different by virtue of the difference of  $m$  and  $m'$ . Now, it is known that there are two such differing interpretations  $I_2$  and  $I_2'$ . For we may suppose  $I_2$  to be the possible interpretation indicated in the above parenthesis. And for  $I_2'$  we may take for  $e_1$  any ordered triad of real numbers, except a specified triad  $(a, b, c)$ , and including  $(\infty, \infty, \infty)$ ; for  $e_2$  the ensemble of triads, except  $(a, b, c)$ , that satisfy any pair of equations,

$$\begin{aligned} A_1(x^2 + y^2 + z^2) + 2B_1(x - a) + 2C_1(y - b) \\ + 2D_1(z - c) - A_1(a^2 + b^2 + c^2) = 0, \\ A_2(x^2 + y^2 + z^2) + 2B_2(x - a) + 2C_2(y - b) \\ + 2D_2(z - c) - A_2(a^2 + b^2 + c^2) = 0; \end{aligned}$$

and for  $e_3$  the ensemble satisfying any one such equation. Just as



when we compared  $D_1$  and  $D_2$ , so here the conclusion is, that (C) is not valid.

As a matter of fact mathematicians know that there are possible infinitely many different interpretations of  $P$ . It follows from the foregoing that there are correspondingly many different doctrines. For the sake of completeness we may include  $D_1$  among these, although, for the purpose of answering a hypothetical objection, we momentarily supposed  $D_1$  to be disputable or inadmissible.

Which one of the  $D$ 's is (or should be called) Euclidean geometry of three dimensions? I say which "one"? For, as no two are identical, it would be willful courting of ambiguity to allow that two or more of them should be so denominated. Which *one*, then? Evidently not one of the numerical ones, such, for example, as the two above specified. For who has ever *really* believed that a point, for example, *is* a triad of numbers? We know that the Greeks did arrive at geometry; we know that they did not arrive at it through numbers; and we know that, in their thought, points were not number triads, nor were planes and lines, for them, certain ensembles of such triads. The confusion, if anybody ever was really thus confused, is due to the *modern* discovery that number triads and certain ensembles of them happen to satisfy the same relations as the Greeks found to be satisfied by what they called points, lines, and planes. There is really no excuse for the confusion, for, if Smith is taller than Brown, and yonder oak is taller than yonder beech, it obviously does not follow that Smith is the oak and Brown the beech.

Evidently Euclidean geometry of three dimensions is that particular  $D$  for which the  $I$ -things are points, lines, and planes. Here it is certain to be asked: What, then, are points, lines, and planes? And the asker will mean to imply that, in order to maintain the proposition, it is necessary to define these terms. The proper reply is that it is not necessary to *define* them. All that can be reasonably required is that they be indicated, pointed out, sufficiently described for purposes of recognition, for what we desire is to be able to say or to recognize what Euclidean geometry is about. To the question one might, not foolishly, reply that the terms in question denote things that you and I, if we have been disciplined in geometry, converse understandingly about when we converse about geometry, though neither of us is able to say with *absolute precision* what the terms mean. For who does not know that it is possible to write an intelligent and intelligible discourse about cats, for example, without being able to tell (for who can tell?) precisely what a cat is? And if it be asked what the discourse is about, who does not know that it is an informing answer to say that it is about cats. It is informing because the term cat has an excessive meaning, a meaning

beyond that of satisfying the propositions (or relations) of the discourse.

Just here it is well worth while to point out an important lesson in the procedure of Euclid. Against Euclid it is often held as a reproach that he attempted to define the element-names, point, line, and plane, since no definitions of them could render any logical service, that is, in the strictly deductive part of the discourse. But to render no logical service is not to render no service. And the lesson is that the definitions in question, which it were perhaps better to call descriptions, do render an extralogical service. They render such service not only in guiding the imagination in the matter of invention, but also in serving to indicate, with a goodly degree of success, the excessive meaning *m* of the elements denoted by the terms in question and in thus serving to make known what it is that the deductive part of the discourse is about. One should not forget that no discourse, no doctrine, not even so-called pure logic itself, is exclusively deductive, for in any doctrine there is reference, implicit or explicit, to something extraductive or extralogical, reference, that is, to something which the doctrine is about.

Are the three Euclidean "definitions," thus viewed as descriptions, sufficient or adequate to the service that they are here viewed as rendering? If by sufficient or adequate be meant exhaustive, the answer is, of course, no. For we may confidently say that no possible description, that is, no description involving only a finite number of words, possibly can exhaust the meaning of a system of terms except, possibly, in the special case where these have no meaning beyond what they must have in order merely to satisfy a finite number of postulates. But exhaustive is not what is meant by adequate. To employ a previous illustration, it is not necessary to give or to attempt an exhaustive description of "cat" in order to tell adequately what it is that a discourse ostensibly about cats is ostensibly about. It is a question of intent. A description is nearly, if not quite, adequate if it enables us to avoid thinking that terms are intended to denote what they are not intended to denote. And, whilst we may not admit that the three Euclidean "descriptions" are the best that can be invented for the purpose, yet we must allow that they have long served the end in question pretty effectively and that they are qualified to continue such service. They have been and they are good enough, for example, to save us from thinking that the things which in geometry have been denoted by the terms, points, lines, and planes, are identical with number triads, etc. The open secret of their thus saving us is no doubt in their causing us to think of points, lines, and planes in terms of, or in essential connection with, what we know as *extension*, whilst numbers and number

ensembles are not things naturally so conceived. For evidently the notions of "length" and "breadth" involved in the Euclidean "descriptions" are not *metric* in meaning; they do not signify definite or numeric quantities or amounts of something (as when we say the length of this or that thing is so and so much); but plainly they are generic notions connoting *extension*. It is safe to say that a mind devoid of the concept or the sense of extension could not know what things the "descriptions" aim at describing. It is true that Euclid's "description" of a point as "that which has no part" implies a *denial* of extension, but the denial is one of *extension*, and, in its contextual atmosphere, it is *felt* to be essential to an adequate indication of what is meant by point. On the other hand, if one were (and how unnatural it would be!) to describe an ordered triad of numbers as "that which has no part," it would be immediately necessary to explain away the seeming falsity of the description by saying that the triad is not the ordered multiplicity (of three numbers) *as* a multiplicity, but is merely the *uniphase* of the multiplicity, and that it is this uniphase which has no part. If, next, we were to say that thus extension is denied to the uniphase, the statement, though true, would be *felt* to be inessential to an adequate indication of what is meant by a triad of numbers. Such felt difference is alone sufficient to make any one pause who is disposed to adopt the current creed that a point is nothing but an ordered triad of numbers. It is not contended that a point is *composed* of extension; the contention is that point and extension are so connected that a mind devoid of the latter notion would be devoid of the former, just as a mind devoid of the notion of variable or variation would be devoid of the notion of constant, though a constant is not a thing *consisting* of variation; just as the notion of limit would not be intelligible except for the notion of something that may have a limit, though the limit is not *composed* of it; and just as an instant, which is not *composed* of time, would not be intelligible except for the notion of time.

In a discussion of such matters it is foolish and futile to talk about "proofs." The question, as said, is one of intent; it is a question of self-veracity, of getting aware of and owning what it is that we mean by the terms and symbols of our discourse. If, despite the Euclidean "descriptions" and despite any and all others that may supplement or supplace them, one fails to see that *extension* is essentially involved in the meaning that the terms points, lines, and planes, are intended to have, the failure will be because "as the eyes of bats are to the blaze of day, so is the reason in our soul to the things which are by nature most evident of all." Nothing is more evident than that there is something that is called extension. We have but to open our eyes to get aware that we are behold-



ing an *expanse*, something extended. We see things *as* extended; things *as* extended are revealed to the tactile sense; a region or room involving extension is a datum of the muscular sensations connected with our bodily movements; and so on. So much is certain. But it is said and rightly said that these are *sensible* things; that the extension they are revealed as having is *sensible* extension; that these sensibles are infected with contradiction, above noted, revealed in common experience, and confirmed by the psychophysical law of Weber and Fechner; that geometry is free from contradiction; that, therefore, geometry is not a doctrine about these sensibles; that among these sensibles are not the things which in geometry are denoted by the terms point, line, and plane; and that, if these terms imply or connote extension, as asserted, this extension is not sensible extension. Granted. The "connoted extension" is not sensible, it is conceptual. How know, however, that there is conceptual extension? The answer is, by arriving at it. (We need not here debate whether such "arriving" is best called creating or is best called finding.) But how does the mind arrive at it? By doing certain things to the sensibles, the raw material of mental architecture. What things? An exhaustive answer is unnecessary—perhaps impossible. The things are of two sorts: the mind gives to the sensibles; it takes away from them. Consider, for example, a sensible line. From it the conceptualizing intellect takes away (abstracts from, disregards) certain things that the sensible in question has or may have, as color, weight, temperature, etc., including *part* of the extension, thus, I mean, narrowing and thinning away all breadth and thickness. What of the extension called length? Have the narrowing and thinning taken it away? It was not so intended, the opposite was intended. Yet no sensible length (extension) remains. Does the narrowing and thinning involve shortening? We are absolutely certain that it does not. What, then, is it that has happened? Evidently that, by the indicated taking away, the mind has arrived at insensible length, one kind of insensible extension, that is, at conceptual length, one kind of conceptual extension. A stretch, we are sure, remains, but it is not a sensible stretch. The extension thus arrived at is yet not the extension connoted by or involved in the things that geometry is about, for in the taking-away process of arriving at it there is nothing to disinfect it of the contradictions inherent in the sensible with which we started. It remains, then, to follow the indicated process of taking away by a process of giving, that is to say, it remains to endow the conceptual extension (arrived at) with continuity so as to render it free from the mentioned contradictions. This done, the kind of extension meant in ordinary geom-

etry or ordinary geometric space is arrived at. Such is, in kind, the conceptual extension that, it is here held, is essential to what the geometric terms, point, line, plane, are intended to mean. Without further talk we may say that such extension is essential in the conceptual space that, we may say, ordinary Euclidean geometry is about in being about the elements of the space.

If we denote this conceptual space by  $cS_3$  to distinguish it from (non-geometrizable) sensible space  $sS_3$ , then the geometry of  $cS_3$ , if constructed by means of postulates  $P$  making no indispensable use of algebraic analysis, may be called pure geometry,  $pG_3$ . If, as in the Caretesian method, we use ordered number triads, etc., as we may use them, not to be points, etc., but to represent points, etc., then we get analytical geometry,  $aG_3$ , of  $cS_3$ . On the other hand, if, as we may, we interpret the  $P$  by allowing the  $I$ -things to be number triads, etc., as above indicated, the resulting doctrine is, not geometry, but a pure algebra or analysis,  $pA_3$ . If we use points, etc., not to be, but to represent, number triads, etc., and so employ geometric language in constructing  $pA_3$ , we get by this kind of anti-Cartesian procedure, not a geometry, but geometrical analysis,  $gA_3$ .

#### HYPOTHESIS $h_1$

It is unnecessary to say anything and is not worth while to say much under this hypothesis. For if the  $e$ 's in  $P$  do not denote something, then as the relations (if there be any) are termless, the doctrine  $D$  (if there be one) is not about anything, unless about the relations, but about these it says nothing, for, if it says aught about them, what it says is that they are satisfied by certain terms whose presence in the discourse is excluded by  $h_1$ . We may profitably say, however, that, in the case supposed where the  $e$ 's do not denote something but are merely uninterpreted variables ready, so to speak, to denote something—in this case we may say that, though there is no doctrine  $D$ , there is a *doctrinal function*,  $\Delta(e_1, e_2, e_3)$ . Then we should add that the doctrines that do arise from actualized possible interpretations of the  $e$ 's are so many *values* of  $\Delta$ . This function  $\Delta$ , if we give some warning mark as  $\Delta'$  to its symbol, may be further conveniently employed in talking about an ambiguous one of the doctrines in question, *i. e.*, about "any value," an ambiguous value, of the function. As above argued, these values, these doctrines are identical in *form*, they are *isomorphic*, all of them having the form of  $\Delta$ , but no two of them are the same in respect of content, reference, or meaning. In this conclusion, analysis, happily, agrees with traditional usage, intuition, and common sense.

## CONCLUDING CONSIDERATIONS

We are, I believe, now prepared to answer definitively the long-vexed question: *What, if any, sort of existence have point spaces of four or more dimensions?*

As we have seen, the conceptual space  $cS_3$  of ordinary geometry is an affair involving extension; it is a triply extended conceptual spread or expanse: three independent linear extensions in it may be chosen; these suffice to determine all the others. So much is as certain as anything can be. It is equally certain that we can, for we do without meeting contradiction, by means of postulates or otherwise, conceive (not perceive or imagine) a quadruply extended spread or expanse, one, that is, in which it is possible to choose four independent linear extensions, and then by reference to these to determine all the rest. There is not the slightest difference in kind among the four independents and not the slightest difference between any three of these and the three of  $cC_3$ . The spread or expanse thus set up is a  $cS_4$ ; like  $cS_3$ , it is purely conceptual; the extension it involves is, in kind, identical with that of  $cS_3$ ; it contains spreads of the type of  $cS_3$  as elements just exactly as a  $cS_3$  contains planes or spreads of type  $cS_2$  as elements; it differs not at all from  $cS_3$  except in being one degree higher in respect of dimensionality. In a word,  $cS_4$  (and, of course,  $cS_5$ , and so on) has the same kind of existence as  $cS_3$ . It is true that  $cS_3$  is "imitated" by our sensible space  $sS_3$ , whilst there is no  $sS_4$  thus imitating  $cS_4$ . But this writing is not intended for one who is capable of thinking that the mentioned sensible imitation or imitability of  $cS_3$  confers upon the latter a new or peculiar kind of existence.

But one thing remains to be said, and it is important. If one denies that  $cS_3$  has the conceptually extensional existence, above alleged, then, of course, the denial extends also to  $cS_4$ , and the two spaces are, in respect of existence, still on a level. If the denier then asserts, and such is the alternative, that  $cS_3$  is only the ensemble of number triads, etc., as above explained, then, if he be right,  $cS_4$  is only, but equally, the ensemble of ordered quatrains, etc., of numbers. Here, again,  $cS_3$  and  $cS_4$  have precisely the same kind of existence. The conclusion is that *hyperspaces have every kind of existence that may be warrantably attributed to the space of ordinary geometry.*

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## DISCUSSION

THE PROBLEM OF VALUES<sup>1</sup>

ALL members of the Philosophical Association owe a debt of gratitude to the executive committee for formulating the question to be discussed at the next meeting. I am aware of no better way of expressing my own gratitude than to comply promptly with the request of the committee for submission of additional formulations of the question.

I shall first make a few remarks upon the formulation by four members of the committee.<sup>2</sup> I assume that in the question, "Is value something which is ultimate and which attaches itself to 'things' independently of consciousness, or of an organic being with desires and aversions?" the "or" is to be understood as marking a genuine alternative between "consciousness" and an "organic being with desires and aversions," not as indicating that the latter clause is in apposition with consciousness or explanatory of it. The alternative is genuine and important: for some may be inclined to connect the existence of values with organic behavior and yet not be willing to equate desires and aversions with "consciousness"—in fact, they may go so far as to hold that "consciousness" (in whatever sense the term is here used) is itself dependent upon matters connected with the desires and aversions of an organic being. Since, however, unconscious desires and aversions may appear to some to involve a contradiction in language, it would seem better to substitute a more objective term, such as selections and rejections; or better yet, to generalize the matter and make the alternative in question to be simply that of connection with the *behavior* of organic beings.

When the question is thus understood, some doubt arises as to the force of the term "ultimate" in the first alternative. Are values if regarded as variables of organic behavior less ultimate than if regarded as things irrespective of connection with organic behavior? And if the answer should be in the affirmative, what is the ground upon which this answer rests?

I have no doubt a successful discussion may be had on the basis of the formulation already presented. In some respects, however, the formulation seems unnecessarily tied up with the idealistic-realistic controversy. I recognize that this complication has the advantage of preserving continuity in the discussions from year to

<sup>1</sup> This paper is presented in response to the request of the committee that further formulations of this problem be submitted for publication.

<sup>2</sup> This JOURNAL, Vol. X., page 168.

year; yet it is possible that the questions at issue might, in the present juncture, be dealt with in the end more effectively if approached by a flank movement. At all events, I venture to submit the following list of questions:

1. Can the question of the status of values in philosophic discussion be approached apart from the question of the status of qualities?

2. Can values be separated from traits of organic behavior? If organic behavior has its own distinguishing traits, does the affirmation that values are traits of organic behavior imply their "subjectivity"? If so, in what sense? Does connection with organic behavior imply their dependence upon awareness?

3. Do values antecede, or do they depend upon valuation—understanding by valuation a process of reflective estimation or judgment?

4. If they antecede, does valuation merely bring them to light without change, or does it modify antecedent values? Does it produce new values? If the latter occur, are the modification and production merely incidental or are they essential?

5. Can the place of intelligence in behavior in general (and in moral conduct in particular) be understood without implying that reflection reorganizes antecedent natural values?

6. What is the meaning of appreciation? Is it a particular mode of apprehending (knowing) values, or is it a name for the direct presence of values in experience? How is it related to valuation and criticism?

7. Does the presence of values in experience in general (or say religious values in particular) have an evidential import? That is to say, does the existence of religious values, for example, prove the existence of any class of objects beyond the values themselves? Or, again, does the presence in experience of any type of values purport to make the mind aware of something in the environment, taking that word in its widest possible sense? [This question may profitably be considered in connection with the first question, regarding qualities.]

8. If the answers to these questions should be in the negative, is the significance of such values for experience and for philosophy thereby determined to be null or illusory? Can an affirmative answer to this question be maintained except on the assumption that all experience is, *ipso facto*, intended to be an awareness of objects?

JOHN DEWEY.

## SOCIETIES

THE NEW YORK BRANCH OF THE AMERICAN  
PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology of the New York Academy of Sciences on November 25 and on February 24. The following papers were presented at these meetings: *Difference Tones and Consonance*.<sup>1</sup> F. KRUEGER.

*The Attempt to Measure Mental Work as a Psycho-Dynamic Process*.<sup>2</sup> RAYMOND DODGE.

*The Psychology of the Earthworm*: ROBERT M. YERKES.

This is a preliminary report of an investigation, now in progress, the purpose of which is (a) to demonstrate whatever ability the earthworm may have to acquire habits of a certain order; (b) to discover the characteristics of any habits which appear; (c) to enumerate and evaluate the various external and internal influences on habit-formation; (d) to ascertain the degree of permanency of the habits, and (e) to discover their relations to the anterior ganglia (brain).

By means of a T-shaped maze constructed from plate glass, specimens of the manure worm, *Allolobophora fætida*, were tested. The maze was placed with the stem directed toward the light. Across one of the arms a piece of sandpaper was placed and, just beyond it, a pair of electrodes. The other arm was left open so that the worm might escape to an artificial burrow. The worms were driven into the T by light and the chief motive for escape therefrom was the tendency to avoid light. It was the purpose of the test to demonstrate (a) any ability which the manure worm may possess to acquire a direction habit and (b) to associate the tactual experience of contact with sandpaper with the electrical shock which regularly followed the tactual stimulus in case the worm continued to move forward after reaching the sandpaper.

Trials were made in daily series varying in number from 5 to 20. The 5 trial series were found, on the whole, more satisfactory.

Referring now exclusively to the results obtained for a single worm which has been under observation since October, 1911, the following results may be presented: (1) *Allolobophora* is capable of acquiring certain definite modes of reaction. (2) Modifications appear as the result of from 20 to 100 experiences. (3) The behavior is extremely variable because of variations in external conditions and in

<sup>1</sup> See "Consonance and Dissonance," this JOURNAL, Volume X., page 158.

<sup>2</sup> See *Psychological Review*, January, 1913.



the condition of the worm itself. (4) There is a tendency to follow the mucous path through the apparatus, but this is not sufficiently strong or constant to yield perfect results. (5) The following are the chief modifications which have been noted: (a) increased readiness to enter the apparatus and to desert it for the artificial burrow; (b) apparent "recognition" of the artificial burrow which is used as "exit tube"; (c) a gradual increase in the number of avoidances of the sandpaper and of contact with the electrodes as a result of the "warning" influence of the sandpaper; (d) the disappearance of the early tendency to retrace the path through the stem of the T; (e) the similar disappearance of the tendency to turn back after progressing well toward the exit tube. (6) The correct performance of a thoroughly ingrained habitual act, of the kind studied in this investigation, is not dependent upon the "brain" (portions of the nervous system carried by the five anterior segments), since the worm reacts appropriately within a few hours after its removal. (7) As the brain regenerates, the worm exhibits increased initiative, its behavior becomes less automatic, more variable. (8) Within four weeks after the operation the regenerated segments appear superficially complete and the worm naturally burrows in a mixture of earth and manure. (9) Two months after the removal of the "brain," during the last four weeks of which period no training was given, the habit had completely disappeared from worm No. 2, the subject to whose responses this paper is devoted, and in its place there appeared a tendency to turn in the opposite direction to that demanded in the training. (10) Systematic training for two weeks resulted in the partial reacquisition of the original direction-habit.

The general results which have just been stated are subject to modification in the light of additional data. To the experimenter it seems that the particular individual which has been longest under observation is in many respects exceptional. It is perfectly clear, however, from results obtained with other individuals that important modifications in behavior appear as the result of training. It is equally certain that direction-habits are not readily acquired.

*Psychology as the Behaviorist Views It:*<sup>3</sup> JOHN B. WATSON.

*Methods of Orientation and Imaginary Maps:* C. C. TROWBRIDGE.

The author classified the methods of orientation under two heads. The first was called the *domi-centric method*, used by all living creatures except man in a civilized state. In this case the manner of moving about the surface of the earth relates to a point, usually the home. In the second type, which was called the *ego-centric method*, or cardinal point method, the use is made of the cardinal

<sup>3</sup> See *Psychological Review*, March, 1913.

points of the compass to give orientation, and those points do not necessarily relate to any particular center or home. It is believed that those creatures using a *domi-centric* method have an advantage over civilized man in finding their way home. There may be readily a combination of the two methods in special cases.

In the second part of the paper it was shown that a very large percentage of people, amounting to the order of 50 per cent., are accustomed to *think* of far distant places in an entirely different direction than they really are, amounting to from 45° to 180° from the real direction. The subjects tested *knew* the correct direction within a few degrees. Statistics seem to indicate that individuals having these "imaginary maps" were more apt to be confused with respect to direction than those not having them.

*The Probable Explanation of Certain Flock Formations of Birds:*  
C. C. TROWBRIDGE.

This paper also consisted of two parts, and in the first the author showed that birds in a large flock when migrating, in all probability, average their errors with respect to a certain distant destination, and if this is the case the explanation of the migration in large flocks of many species of birds can be explained, also; the principle would prevent single birds from going astray.

The second part of the paper related to the Echelon formation of flight of many large birds when flying in flocks; the explanation given being that it is the most protective arrangement. Evidence was brought forward to show that in this formation the birds in the flock can see forward as well as to the side, these regions are the chief "danger zones" that the flying flock is subjected to. The paper was illustrated by diagrams, and by photographs of blue geese taken by Mr. Herbert K. Job at Marsh Island, on the Mississippi delta.

*A Note on the Retention of Practise:* F. LYMAN WELLS.

One subject was highly practised in the tapping test 5½ years ago. Six other subjects were highly practised in addition and number-checking tests nearly 3 years ago. The present experiments were made to ascertain the amount and character of the loss during the relative disuse of the functions. In all tests the loss found was about half the percentile amount gained by practise. The renewal of practise does not bring with it an especially rapid practise gain. Persons who gain much in the addition test regularly tend to lose much in it, but this is not true in the number-checking test. Persons who lose much in the one test, however, tend also to lose much in the other, although the amounts of practise gain in them are negatively related.

*A Comparative Study of the Illusions and Hallucinations of Dementia Præcox and Manic Depressive Insanity:* DARWIN OLIVER LYON.

The various conceptions of the terms *hallucination* and *illusion* were taken up in detail and it was shown that, although no sharp line of demarcation could be drawn between the two terms, yet the distinction was sufficiently fine to warrant their separation in an experiment such as the one under consideration. An hallucination was defined as a subjective sensory image arising without the aid of external stimuli, or, in short, a perception without an object. Illusions were defined as the false interpretation of external objects; i. e., an illusion is the falsification of a real percept. The speaker admitted that cases might occur in which ideas originating wholly in the cortical center might become so vivid as to be taken for sensations that had arisen by stimulation of the sense organs—but he believed that these cases were much less common than is generally supposed.

It was shown that the various authorities differed greatly as to the frequency of hallucinations and illusions in the various forms of insanity. Each of the various psychoses were considered. In *dementia paralytica*, for example, the elder Falret absolutely denied their existence. Kraft-Ebbing says they are so rare that where they are found one should suspect a false diagnosis. Yet Jung, Saury, and Mickle concur in saying that they occur in over one half of all cases.

The part that the various senses play in the fallacious perceptions of the insane was then considered. Though this depends somewhat on the psychosis, both hallucinations and illusions of *hearing* are much more frequent than those of any of the other senses or even combination of the senses. In one form of mania sight hallucinations were found to be greater in number than auditory hallucinations. Hallucinations of taste are very rare. The speaker considered it doubtful if the so-called gustatory hallucinations occasionally seen in *dementia paralytica* were true hallucinations. His experience led him to believe that they were rather the *result* of delusions, in that when a delusion was being "described" by a patient he naturally made his ideas and feelings "fit" accordingly. Of the 361 cases of *dementia præcox* and *manic depressive insanity* tested, only 4 were found having fallacious perceptions of taste, either alone or in combination.

In some cases the patient informs the physician of his own accord regarding his hallucinations and illusions; in others the information sought for must be obtained by some roundabout method. Care must be taken that reported hallucinations are not really illusions;



for example, when in a noisy ward a patient hears herself being called a witch, it is difficult to decide whether she is experiencing an hallucination or an illusion. When, however, the morbid perception occurs in absolute silence we may feel reasonably certain that the patient experiences an hallucination. It was shown that in those cases in which the patient is suspected of endeavoring to conceal the fact that he experiences hallucinations, considerable work may be necessary before their presence or absence can be definitely determined. Careful observation of the patient when he is unaware that he is being watched is, of course, necessary in many cases. Turning the head in a certain direction to listen, gazing at a certain portion of the wall and speaking to it, stuffing the ears with cloth or paper—these and many other “symptoms” lead us to suspect the existence of hallucinations. Evidence of strong emotion, expressions of hate, fear, etc., though not of themselves evidence of hallucinations, warrant further search. The entire test consisted of the following: (1) An examination of the patient’s “history.” (2) Conversation with the physician and attendants in charge. (3) Various questions and tests varied to suit the case. The question concerning the extent to which we should try to *elicit* hallucinations in an experiment of this nature was taken up in detail.

Tables were then presented showing the results of the tests and conclusions drawn. Of the 173 cases of *dementia præcox* 100, *i. e.*, 58 per cent., had fallacious perceptions; of these, 87 were hallucinations; 8, illusions, and 5 hallucinations and illusions. Of the 188 cases of *manic depressive insanity* 64, *i. e.*, 34 per cent., had fallacious perceptions; of these, only 9 were hallucinations, whereas 51 were illusions. Space does not permit a tabulation of the 18 groups into which the speaker assembled his cases. Suffice it to say that hallucinations and illusions of *hearing* come first—comprising as they do, over one half of all cases. Then come *hearing* combined with *sight*, and then those of *sight* alone. The other senses, either alone or in combination, were but sparsely represented.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*A Short History of Logic.* ROBERT ADAMSON. Edited by W. R. SORLEY. Edinburgh and London: William Blackwood and Sons. 1911. Pp. vii + 266.

The philosophical world is greatly indebted to the editor and publishers of this little book for preserving to us in a convenient form and in its entirety the article written by Professor Adamson for the ninth edition of

the "Encyclopedia Britannica." The information which the reader of this review is most likely to desire regarding the new edition is given us in the editor's preface:

"The manuscript of the article has been fortunately preserved—alone among the manuscripts of the author's published writings. It is much fuller than the printed article, a number of passages—some fifty in all—having been struck out by the editor with a view to economy of space. These passages affect both text and notes; they vary in length from a few words to whole sections; they vary also in importance; but the author's own opinion was that the value of his work had suffered by their omission; and with this opinion I agree. In the present book these passages have been restored to their place, so that the article as it left the author's hands is now, for the first time, placed before the reader.

"It should be borne in mind that the article on Logic was written and published in 1882. The supplementary articles, by which it is followed in this volume, are all contributions to the history of logic; but the first of these—that on the Category, also reprinted from the 'Encyclopedia Britannica,'—dates from six years earlier; and only the last carries the story on towards a more recent development of logical theory. Readers of the author's works do not need to be reminded that his own point of view underwent modification, and that there are some things here which he might have expressed differently had he revised the work himself."

The part of the book which seems to-day especially valuable is the long (58 pages) and admirable chapter on the Aristotelian logic, a chapter which could well be used as an introduction to the Aristotelian philosophy. Besides the article on the Category the other articles included in this book and referred to above by the editor were published originally in *Mind*. Their titles are: "Lotze's Logic," "Lotze's Metaphysics," and "Mr. Bradley's Logic."

Among Professor Adamson's conclusions regarding logic the following seem to be the most general and should be recalled to mind. "Logical theory must of necessity be formal, *i. e.*, abstract and general." It can not consider the specific knowledge of the sciences and include scientific method or the various processes by which the sciences have gained their results. In short, it can not include more than the most general scientific methodology. Again, logic can be identified with the theory of knowledge. "Logical laws, forms, and problems are hardly capable of statement; certainly incapable of satisfactory treatment, except in the most intimate connection with the principles of a theory of knowledge." Hence, of course, the conclusion (a lamentable one for any real progress in formal logic): "It has been imagined that a symbolic logic might be developed which should be independent in all its fundamental axioms of any metaphysical or psychological assumptions; but this is an illusion. No logical method can be developed save from a most definite conception of the essential nature and *modus operandi* of thinking." To which the reply can *in the present day* be given: "But it has been done, such a symbolic logic actually obtains."

WALTER T. MARVIN.

*The Persistent Problems of Philosophy. An Introduction to Metaphysics through the Study of Modern Systems.* MARY WHITON CALKINS. Third revised edition. New York: The Macmillan Company. 1912. Pp. xxvi + 577.

The first edition of this excellent book was reviewed in this JOURNAL in 1907.<sup>1</sup> In 1908 a second edition was already called for. The third, 1912, has given the writer larger opportunity to revise the discussion, and to bring it, in particular to bring the bibliography, down to date.

The principal changes in the second edition concerned a more accurate interpretation of the meaning of causality in connection with the discussion of Hume; corrections and alterations in the account of Kant's *Kategorienlehre*; and a restatement of the writer's view of the self in comparison with the theory of a spiritual substance (pp. 408-409).

The third edition carries the same process further. Within the limits of the former pagination, emendations are made alike in the historical interpretations and in the statements of doctrine. In both fields attention is given to the most recent movements of opinion. And it need scarcely be added that everywhere the same conscientious skill is evident which happily characterized the original work. On the side of history, numerous corrections are made in the account of Descartes's theism (pp. 45, 52, 53), with an added summary of the Cartesian philosophy of nature (pp. 42-43); an improved formulation is given of Hobbes's defense of materialism (pp. 62-63); restatements are offered of certain points in Berkeley's system (pp. 122, 130), and a "more spiritualistic" interpretation advanced of Schelling's philosophy of identity (pp. 339-342). On the side of doctrine, the most important changes are a defense of the writer's doctrine of the self against the objections based on the facts of multiple personality (pp. 409-410), and a recasting of parts of the argument on freedom (pp. 429, 449, 451-452).

In almost every case these changes are improvements. They do not amount, however, to essential alterations, for the point of view remains the same. This appears also in the references to current movements which include something of both interpretation and doctrine. Montague's *Energetik* now shares in the criticisms first leveled at Haeckel and Ostwald (pp. 399-400). A fresh section on neo-realism (pp. 402-404) rebuts the objections of the newer school to the idealistic position. Account is taken (p. 441) of the relations of Bergson's conception of time to absolute personalism. But this continuity of doctrine furnishes no ground for regret. On the contrary, friends and critics will unite in congratulating the author on the merited favor which has given occasion for this revision of her work. And they will count themselves fortunate to possess her conclusions articulated into the outline of contemporary discussions.

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A. C. ARMSTRONG.

*The Imaginal Reaction to Poetry.* JUNE E. DOWNEY. The University of Wyoming, Department of Psychology, Bulletin No. 2. Pp. 56.

Miss Downey presented to her subjects (12 all told) some 110 poetic

<sup>1</sup> Volume IV., page 440.



fragments selected from the works of Blake, Poe, Keats, Shelley, and Swinburne. The subjects were required to report on the imagery roused by each selection and to pass judgment on the affective value of each. The first tests involved visual presentation of the material. Other tests show the result of auditory presentation. Her tables show that, "Although for every reagent visual images were more frequent than any other kind of image, the excess of such images varied greatly from subject to subject." This was true for both kinds of presentation. Many examples were found of auditory, olfactory, tactual, temperature, pain, organic, kinesthetic, and optical-kinesthetic images, and some few of gustatory images. The degree of conscious control over imagery varies with different subjects. The part played by "inner speech" in the appreciation of poetry is of considerable importance. Motor or auditory-motor inner speech is common, but visual inner speech is very uncommon except in the case of one subject.

An interesting comparison between the five poets comes to light in the author's discussions of "the method of style." Poe, Shelley, and Keats excel Swinburne and Blake in the number of visual images which their lines stimulate. "Poe gives the highest number of successful auditory suggestions; Shelley the highest number of successful olfactory suggestions; Keats the largest number of successful cutaneous images, and Poe the greatest number of successful organic suggestions, with Shelley but slightly behind."

The relation between imagery and the affective judgment is also studied, and it is apparent from the tables that vivid imagery is an important factor in the affective judgment of literature. Visual imagery appears to be the most effective in stimulating pleasant reactions, and organic imagery in unpleasant reactions. Greater consistency appears among the subjects in judging pleasant than unpleasant fragments.

The last division of this study compares affective with esthetic judgments. The general conclusion is that, "although the very pleasant fragment may be esthetic, or the esthetic pleasant, there is no necessary relation of the sort."

Miss Downey's monograph contains an extremely interesting set of records, and her material is presented in such an adequate and straightforward way as to earn the gratitude and admiration of the reader.

KATE GORDON.

LOS ANGELES.

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## JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. September and October, 1912. Double number, the first of two devoted to religious experience in Catholicism. The criterion of distinction is that the experiences are within a religion of authority. The first four articles describe the experiences of the great orders. Each order emphasizes a phase of the complete religious

experience which is typical for it and becomes the basis of interpretation for all its experiences. The last four articles treat the philosophy of religion on its theoretical side. *La vie religieuse de l'anachorète, du cénobite et du moine Bénédictin* (pp. 225-256): D. H. QUENTIN. — The goal of anchorite and cenobite is renunciation and personal perfection in a life where all traces of action are banished. To asceticism the monks add obedience as a means to attain their end. The religious tone of the Benedictines is one of deep humility and reverence joined with an internal joy. *L'âme franciscaine* (pp. 257-299): P. UBALD D'ALENÇON. — The Franciscan spirit is one of peace and submission, animated by a passionate personal love for the humanity of Christ. Detachment from the world and extreme poverty are means for the attainment of perfection. *Le Frère Prêcheur* (pp. 300-333): H.-A. MONTAGNE. — The Dominicans show a great variety of experiences. They are animated by the zeal of the apostolic life, and seek in contemplation the truth which they may teach. *Sainte Thérèse et le Carmel* (pp. 334-370): P. MARIE JOSEPH DU SACRÉ COEUR. — The distinguishing feature of the Carmelites is a love of the sacred person of Christ joined with the worship of the Virgin Mary. Love brings about a union with the divine which begins on earth in contemplation. *Quelques réflexions sur la méthode en psychologie religieuse* (pp. 371-391): J. PACHEN. — Religious psychology has for its field the description and classification of the phenomena of consciousness purporting to be relations with a superior world. Mystics and their writings must be known and scientifically examined. History, sociology, and physiology must aid in the investigation of mystic states. We must ask how we can know God in the mystic state, even though the question can't be answered. Miracles must not be disbelieved, yet the work of religious psychology is to be free from all apologetic motives. *L'épanouissement sociale de l'amour de Dieu* (pp. 392-415): GEORGES GOYAN. — The sacramental life on earth is possible only by association with the love of God, which in its turn expands itself in the loving actions of men. *Sur quelques traits distinctifs de la mystique chrétienne* (pp. 416-488): T. MARÉCHAL. — Man's psychological life is a unity. The various stages in the spiritual life are described. Ecstasy is a synthesis of a negative empirical and a positive transcendental state. Christian mysticism is characterized primarily by the supernatural grace which causes it, and the union of the soul with God which accompanies it. Bibliography. *L'expérience, la raison, les normes extérieures dans le catholicisme* (pp. 489-529): HENRY PINARD. — Under the rule of faith reason is to establish truth which the will is to accept as its norm with such loyalty that the soul comes to experience internally a partial union with God.

REVUE PHILOSOPHIQUE. November, 1912. *La perception des grandeurs* (pp. 433-448): B. BOURDON. — Qualitatively different phenomena are brought together under the name of *quantities* and, consequently, we have a habit of neglecting certain real ambiguities in the meaning of

thé term. *L'autorité* (pp. 449-464): A. PENJON. - A criticism, not very favorable, of C. B. Huizinga's "Authority," which is said to have made some stir in America. *Le concept de l'idéal* (pp. 465-495): D. DRAGHISCO. - Many problems concerning the nature of the ideal spring from a divorce of discursive reasoning from intuition. *Revue générale. Les revues allemandes de psychologie en 1911*: M. FOUCAULT. *Analyses et comptes rendus*. G. Richard, *La sociologie générale et les lois sociologiques*: G.-L. DUPRAT. Dr. J. R. d'Allonnes, *L'affaiblissement intellectuel chez les déments*: PH. CHASLIN. Dr. G. Saint-Paul, *L'art de parler en public*: DR. CH. BLONDEL. Lévy Bruhl, *Préface à David Hume*: M. SOLOVINE. J. Fabre, *Les Pères de la Revolution*: L. DAURIAC. J. Goldstein, *Wandlungen in der Philosophie der Gegenwart*: M. SOLOVINE. *Notice bibliographique. Revue des périodiques*.

Branford, Victor. *St. Columba: A Study of Social Inheritance and Spiritual Development*. Edinburgh: Patrick Geddes and Colleagues. 1913. Pp. 83.

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## NOTES AND NEWS

LETTER TO DR. HARALD HOFFDING

February 14, 1913

DR. HARALD HOFFDING,  
The University,  
Copenhagen, Denmark.

Sir:

We, the undersigned members of the Department of Philosophy in Columbia University in the City of New York, beg to tender you, on the occasion of your seventieth birthday, an expression of warm personal regard and of high appreciation of your long and eminent service as a teacher of philosophy as well as of your valuable contributions to the literature of our subject. Through translations, your writings in the Danish language have been made familiar to students and readers of philosophy in Germany, in France, in England, in the United States, and elsewhere throughout the world. We hope that you may be spared for



many years of additional service to continue to spread abroad knowledge and appreciation of the things of the mind.

We have the honor to be,  
Faithfully yours,

HENRI BERGSON, <i>Visiting French Professor, 1912-13</i>	NICHOLAS MURRAY BUTLER, <i>President of Columbia University</i>
JOHN DEWEY, <i>Professor of Philosophy</i>	F. J. E. WOODBRIDGE, <i>Johnsonian Professor of Philosophy</i>
HERBERT G. LORD, <i>Professor of Philosophy</i>	FELIX ADLER, <i>Professor of Social and Political Ethics</i>
DICKINSON S. MILLER, <i>Professor of Philosophy</i>	ADAM LEROY JONES, <i>Associate Professor of Philosophy</i>
WENDELL T. BUSH, <i>Associate Professor of Philosophy</i>	WILLIAM P. MONTAGUE, <i>Associate Professor of Philosophy</i>
RUDOLPH EUCKEN, <i>(Exchange Professor)</i>	WALTER B. PITKIN, <i>Associate Professor of Philosophy</i>

#### DR. HOFFDING'S REPLY

COPENHAGEN U., April 4, 1913

PRESIDENT BUTLER,

*Dear Sir,*

It was to me a very great honour and pleasure to receive on the occasion of my seventieth birthday such a splendid message from you and my other philosophical colleagues at Columbia University with the adherence of two so eminent European thinkers as Bergson and Eucken.

I will keep this document among the best remembrances of the day, which was a very beautiful day for me, owing to the warm sympathy with which my colleagues and my students celebrated it.

I remember with pleasure your visit in Copenhagen, and I hope that you and Mrs. Butler are quite well.

I beg you to express my warm and sincere thanks and compliments to the colleagues who subscribed the salutation, and I am, dear Sir,

Your most affectionate

(Signed) HARALD HOFFDING

THE annual meeting of the Southern Society for Philosophy and Psychology was held on April 8 and 9 at the Johns Hopkins University, Baltimore.

DR. WILLIAM ERNEST HOCKING, of Yale University, has been promoted to the grade of professor of philosophy.

PROFESSOR LLOYD MORGAN, F.R.S., has been appointed Herbert Spencer lecturer for 1913 at Oxford University.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### CONFORMITY, CONSISTENCY, AND TRUTH: A SOCIOLOGICAL STUDY

WHAT constitutes truth for some years has been a question, if not even the question, of the hour, at least among the philosophers. Traditional criteria having from various reasons become discredited, there has been need of the closest and hardest kind of thinking on this important point, and with the rise of the need, as always when a need comes from the passing of long-accepted restraints, there has been a good deal of recklessness and extravagance. Old restraints apparently out of the way, truth has come to be what any one pleases, and in these days the thing that pleases is the thing that "goes" or "works." At least so much has evolution done for the enjoyments of life, making movement, rather than condition, doing something or producing something, rather than just having or being or feeling something, at once the primary and the ideal source of pleasure now or even hereafter. Indeed, only to come back to my starting-point, it is evolution that besides changing the tests of pleasure has also made necessary a change in the tests of truth.

What, then, thanks to the new systems of values imposed by evolution, really constitutes truth? What is it, in other words, to "go" or "work"? How far in "going" or "working" can we discover, not loose and dangerous tests, but tests that will secure both responsible and vital thinking and knowing? Such is the problem; and with regard to the present study being a sociological study, as indicated in the title, I will say only, what in my opinion is quite obvious, that the nature of truth, if a philosophical issue, is also a sociological issue, and I am now concerned with a certain point, a simple point, too, although to my mind of much interest and importance, in which the problem of truth has a sociological bearing. Let me hope that the elusive term, sociological, is here used within reasonable and recognizable bounds.

Now, before considering the newer tests of truth, what have long

been the accepted tests? Were I to put this question directly to every one reading this article and to get answers from all, I think the answers would come almost, if not quite, without exception, not necessarily in these words, but with this substance: *Conformity to an external reality, to things, so to speak, out there, and complete consistency with self; or, more concisely, external conformity and internal consistency.* Also, as I suspect, many of those who answered would even be disposed to ridicule any other tests. Even in these days of evolution they would conservatively still insist that, although for actual experience at any stage or time, that is, for any experience that must be partial and relative, conformity and consistency are no longer to be thought of as ever actually attainable, nevertheless they must remain the tests of final and absolute experience and so, however unattainable, ought to be kept and vigorously maintained as ideals. Perhaps; only it is well to reflect at once that such ideals, the ideals of unearthly perfection, show merely a formal appreciation of evolution and, whatever their showing, they are discouraging to the point of a stultifying pessimism. The journey of evolution, not just the hopelessly far goal, the movement and action, not just some imaginary place or condition at the end, the daily progress and achievement, not just the last act, must have primary and essential worth and significance. Yet, in virtual if not in intended opposition to such a view, there are still many who insist on the medieval tests, external conformity and internal consistency, which, or at least which alone and not greatly qualified, being abstractly ideal, I submit, never carried a traveller any recognizable distance or never, whatever value they may have for routine, characterized any real action.

Perfectionism and its false or only formal evolution aside, let me try (1) to show very briefly what external conformity and internal consistency as tests of truth really demand in practise, (2) to explain, so far as I can, how such tests ever got their wide vogue and authority, and (3) taking up the newer tests of "going" or "working," to appraise these as tests, indicating what may be their relation to conformity and consistency and what, if any, use the new may make of the old. When I have done so much, I shall be ready, finally, to suggest, at least in a brief and preliminary statement, what to me is a very interesting application to society and its part in *true* experience.

1. As to the actual use of the traditional tests of conformity and consistency I suggest the following: One's idea of a tree can be true, first, only if it be the copy of a tree; thus, in the case of any individual tree, only if it have what I will call a photographic correspondence to some tree "out there," say in my neighbor's orchard, or, in the case of the class or genus, only if, as a conception, it reproduce in the mind at once all the things and the constitutive unity of all the



things which all trees are; and, secondly, if, besides being a copy of a tree, it be also quite at one with itself and not incongruous with the copies of other things already present or presentable to the mind; in other words, again in case of the individual, only if it possess stability or what we sometimes know as self-identity, an internal orderliness of its parts, and individual self-consistency, and, in case of the genus, only if, as a conception, it involves nothing that, as to what trees themselves are, is internally inconsistent or that by conflicting with conceptions of other things, other natural objects, such as stones or clouds or stars, will make the general content of the mind internally inconsistent.

So runs the long prevalent notion of a true idea and, by obvious implication, of truth in general. Further explanation of it or illustration is, I think, not called for. It plainly accords with a type of mind, a standpoint in life and thought, that is well enough known to be recognized and appreciated, and its strict obedience to the tests of conformity and consistency is apparent, although my unreservedly bold statement of it must make also apparent certain inherent difficulties attaching to those tests.

2. But, secondly, how came such a notion of truth to get its vogue? This—how bromidic to say so—is matter of history. There was a time when the problem of truth did not worry mankind at all and when men on whatever tests just took their ideas as true without taking any thought at all or having any knowledge as to what their tests were. Then, again, there was a time when a different notion of truth from that just outlined prevailed and was recognized and consciously avowed. Still, not to do more than just to mention these conditions in a past more or less remote, the time came, as Christendom now knows so well, when dualism became the dominant “ism” at least of occidental life and thought. I say nothing of life and thought in the orient. Dualism, which is of course in most minds almost synonymous with medievalism, but which, although possibly synonymous to a certain extent, is probably better thought of as an effect rather than as a cause or condition of medievalism, being—as hereafter to be pointed out—an outcome of ecclesiastical assertiveness and isolation, made man live with reference to what was at once outside and alien. Being himself of two separate and exclusive parts and natures, he was put in this situation: his physical nature had to adapt itself to an external spiritual life, and his spiritual nature, returning the courtesy, had to adapt itself to an external physical life. To waive other special cases of such adaptation, in his knowledge man had to know an external physical world and also a not less external spiritual world. What, then, under such conditions naturally would constitute true knowledge? Dualism had no choice

but to make external conformity and internal consistency the tests, sometimes putting emphasis mainly if not exclusively on consistency, as in idealistic rationalism and deduction, sometimes on conformity, as in empiricism and induction, and sometimes declaring equally for both, as in Kantianism, where consistency applied to the form and conformity to the matter or content of knowledge. That Kant found neither consistent knowledge nor objectively true or conforming knowledge<sup>1</sup> ever possible in positive or actual experience does not affect the present point at all. We have simply to understand that so long as the medieval dualism is retained, however refined and purified it may be, true knowledge must be a matter of conformity, consistency, or both. To have shown the humanly unattainable character of such truth may have created a demand for other tests or at least have raised doubts about the accepted tests; it may have amounted, as in the opinions that some have of Kant's philosophy, to a very nice *reductio ad absurdum*; but, once more, hold to the tradition of medieval dualism and you are bound to the tradition of conformity and consistency. Given two distinctly separate and different things; then each must be in itself identical and consistent and the two with respect to any possible relation between them must, if positively related, literally conform, and, if negatively, absolutely non-conform. Dualism, honest with itself, can allow no middle course. True, the two tests, external conformity and internal consistency, when both insisted upon at the same time, may necessarily interfere with each other, and knowledge, accordingly, each test in some measure compromising the other, may be made "phenomenal," as Kant, in fact, found it, but this is merely a luminating exposure of dualism which from the very nature of the case ought to be expected to impose conflicting tests. Is it not quite conclusive that, if two things are dualistically different and exclusive, neither can really assume any positive relation to the other by conforming thereto without compromising its own identity or consistency, and neither can assert itself as identical and consistent without making conformity to the other in just so far impossible?

But here an important qualification must be added. In the middle ages the authority of the church was such that, if I may so express the case, the absurdities or impossibilities of dualism were suppressed and nicely concealed. Under the artificial conditions—artificial at least to later discovery and retrospection—which the assertiveness of the church and all that this implied created, there appeared no conflict or no serious discrepancy between the two tests, consistency and conformity. True, non-conforming facts of very brutal sort were present and by no means unnoticed; the world, the

<sup>1</sup> In the sense of knowledge as reproducing something really "out there."

flesh, and the devil were at least not inactive; but it was assumed, as for assertion's sake and authority's sake it had to be assumed, that what did not conform did not really exist and in good time under proper treatment would disappear. Of course, with the usual pleasantries of human events, the confident and assertive church fought that non-conforming trinity, not merely with its own dogmatic trinitarian theology and the various rites and exorcisms thereof, but also with weapons for which, although they were either formally sanctified or carefully disguised, history—the retrospective view again—has had no better names than these three, the world, the flesh, and the devil. A non-conforming might made right as well as wrong in those days. That, however, although hardly impertinent here and although of considerable interest hereafter, is not exactly the story which I am just now telling. Under the artificial conditions—this is what I would say—the old tests held and they were found inadequate or rather, as final and immediate tests, not really applicable until a hopelessly distant end of things, only at such time as the conditions came to be seen and appreciated as artificial. The coming millennium, near enough in the consciousness of the middle ages to be felt as real, to be, as it were, a factor in the people's "specious present,"<sup>2</sup> was certainly a solvent for many difficulties.

On medieval dualism, then, lies the responsibility for consistency and conformity as tests of truth. But medieval dualism—may I not now appear too presumptuous or over-confident—has passed or, with more accuracy, has lost its prestige. The dualistic way of explaining certain facts is no longer the commonly accredited way. The difference between mind and matter, subject and object, spiritual life and natural life, is now a difference that means, not the existence of two separate and naturally exclusive worlds or orders or substances, but the wealth, the inexhaustible life, the rich potentiality, even the creative activity of one. I can not here enter into a discussion of all that this means. Some light, however, must be thrown upon it. Reference was just made to creative activity. So long as men held, whether openly and literally or only virtually, to the notion of a special creation—a dualistic notion, of course, and not without its own difficulties—the natural or physical world, the created world, had and could have only a somewhat narrow uniformity, its structure and movement being under the constraints of some definite plan or programme, but the natural world nowadays is not viewed, in the orthodox sense, creationistically. The world-process, instead of any longer being the working out of a narrow programme specially con-

<sup>2</sup> By the people's "specious present" I mean so much of time, that is, so much of the past and so much of the future, as the content or matter of their life, as determined by knowledge and belief, seemed to them to fill.



ceived as to its form, and specially timed and located, is the working out of a free principle, which is so free that it is capable of expression in any number of programmes and which, although always implying unity, differs from any single plan or programme or—let me say—from uniformity as infinity from finiteness. Our modern world, in short, has unity, not uniformity, and so, only showing how certain tables have been turned, instead of being itself a product or result of creation, it is in its own life, thanks to the freedom and bigness of the unity, constantly creative. Its own life is creative at least in the sense, certainly a genuine sense, of the unity of it being superior and constantly showing its superiority to any manifested uniformity. Indeed the superiority is so great that, not only is the actual world spatially or temporally far from exhausting the content or the meaning of the unity, but also no limits can ever be set to possibility—provided only that anything ever becoming actual accord, I do not say with any now known or even any now conceivable plan, but with some then discoverable plan.<sup>3</sup> Evolution, as it is at last coming to be appraised, has thus given us a real universe, not merely a uniform one. With uniformity went, as suggested already, special creation and the medieval dualism; with unity, the free unity of a real universe, goes an always creative life and, with regard to the fate of dualism under the newer view, this, even like the creation, has not really been lost, but on the contrary has been wonderfully magnified or aggrandized, having become—can I count on being understood?—a living principle of duality, a function, instead of remaining in its quondam character of a single dual structure. Evolution has made creation general, and natural as general, and dualism functional, compounding both, one might almost say, to infinity, so that those who have seen in evolution only anti-creationalism and only anti-dualism have certainly been seriously misled by some one, perhaps, as is not unthinkable, by the evolutionists themselves. As to the old-time creationalism and its passing, has a real creature ever failed, not merely to supplant, but also to honor by splendidly outdoing its maker? And another question: As to the medieval dualism, setting the universe as it did to a given structure, must not any structure imply action, and implying action, must it not with the action be freed as a principle or function instead of remaining a set condition?

But what of the tests of truth? With the medieval structural dualism losing caste, with creation turned general and natural, with a free unity, having for content, in addition to all defined actuality, an undefined potentiality, taking the place of a narrow uniformity,

<sup>3</sup> The importance of possibility or potentiality to the unity or wholeness of the universe is the burden of an article, "The Passing of the Supernatural," this JOURNAL, Vol. VII., page 533.

for which there could be no possibility save that of unnatural miracle, I say with all these changes, external conformity and internal consistency could hardly be expected to retain their unqualified hold on the minds of men. They might still be kept as helps or instruments, that is, as having mediative value, but as final tests, as immediate and conclusive, they must give way to something else. And to what?

3. With this question, thirdly, we return to "going" or "working" as determining what is true; for the pragmatic test is that, not which has merely taken the place of the others, but, as I would now put the case, which has come as a result of the others or in fulfilment of them. In my opinion the historical antecedents of pragmatism in any of its aspects, but particularly in its doctrine as to what constitutes truth, have had far too little attention. History is always such an interpreter and it is so sure to correct the extravagance to which those who are ignorant of it or unmindful of it are very prone. But how can we best put the history by which the tests of consistency and conformity have become the test of "working"? In general the historical change from medievalism to modernism has been this: The assumed institutes of the earlier time have become the recognized instruments of the later and, as the institutes have thus become instruments, life itself has changed from having relation to a complex of supposedly commensurable factors to having relation to factors of which commensurability is not a necessary condition. By commensurable factors are meant persons as well as things which may be judged or measured according to some given standard, and which being so judged may also be acted upon uniformly. But, now that I have so concisely outlined the historical change, there is need of some illustration. Thus, as to the first point, the institutes of monarchy have become the instruments of democracy; the dogmas of a religion of authority are now only the symbols or cults of a religion of belief; the ancient classics from being the learning of the time are now little if anything more than so much educational discipline often even to the point of merely having given methods of study and instruction to modern subjects; castes, guilds, and the like are only classes in a social life the labor of which is quite consciously divided; one-time metaphysical doctrines of reality, wholly freed from their original setting, from their very special application, as, for a notable example, in the case of dualism or creationalistic causation, are now hypothetical standpoints or methods in the investigations of an empirical science; and, not to overwhelm any one with evidence, even the earth is no longer an institute, but is instead the mere instrument of the sun or—more accurately—is but one detail in an unbounded system whose law is of far more significance than any center. But now, besides so much evidence or illustration, there

is that which has central interest for the present study. External conformity and internal consistency as tests of truth are no longer institutes, but instruments; no longer ends, but means; or, as was even suggested above, no longer of immediate, but only of mediate value. And observe that this is to say that, although so changed, the old tests are still with us. Also, although tests originating in artificial conditions, they should suffer no opprobrium of artificiality, for the simple reason that the conditions themselves are taken only as instrumental to what is real. There is, of course, a sense in which an instrument must be artificial.

In addition to the growth of institutes into instruments there was mentioned also the change from commensurability to incommensurability. The two changes, I am sure, belong most intimately together, although I may have difficulty in showing just why. Still the difficulty can hardly be insurmountable. Any institute may certainly be spoken of as a measure. Also as an institute it depends on an assumption that life is concerned or at least is properly concerned with nothing which can not be, so to speak, evenly measured by it. To be "evenly measured" is to have nothing left over, nothing—or at least nothing of any significance or importance—unaccounted for; to be classifiable without hesitation or equivocation; to accord exactly with the specific standard under which the accounting is made. But if the institute, as institute, thus implies even measurements, let it become instrument and the implication changes and must change materially, for plainly life will have become larger and deeper than its old measure. As to this, in the first place, institutionalism plainly defines life spatially and temporally and actively or occupationally; for instrumentalism life is undefined or infinite, since the very idea of an instrument, tool, or method calls for an unlimited field of use or application. The field is as truly without limit as straightness, measured—let us say—by the inch, can always be, however long, one inch longer. Given any instrument or method, any tool or symbol, any measure or any standard, there is *always* possible one more use for it. But, in the second place, under instrumentalism, not only can no limit be set to the possible applications of the instrument, but also, only showing how truly the recognized field of life has widened and deepened, besides such immeasurability or infinity there is incommensurability to be accounted for and, as I think will be seen at once, nothing could punctuate the widening of the field, the change from finiteness to infinity, more than this, nor could anything more conclusively show the loss of immediacy or finality of value for the given measure or instrument. What incommensurability is in mathematics is common knowledge, but in the more general sense of measures adopted here I may not be understood. So let me add a few



more general remarks and then offer the most pertinent illustration.

In general, an institute become instrument must imply real action, not routine. Real action must be in an unbounded or infinite field, for a finite field would show the institute and its routine still immediate instead of mediate in value. An infinite field, however, must imply, not a merely negative immeasurability, but a positive immeasurability, that is, incommensurability.<sup>4</sup> Incommensurability, involving at least two measures instead of one, is only a sort of short-circuiting of infinity; it is a direct expression of what infinity as an impossible limit is an indirection for; it is, not the form, but the reality of infinity. To put the case geometrically, infinite length formally may never look like anything but length long drawn out, persistently measured, and eternally measurable, inch by inch or mile by mile, but in real meaning it carries thought across the bridge from length as just length to length as ratio, and so in real meaning it is in a two-dimensional field and only formally in a one-dimensional field.<sup>5</sup> Duality or in general multiplicity of dimensions is, geometrically, the very essence of incommensurability. But with proper apologies for my layman's geometry, let us turn to the promised pertinent illustration. There was once that reigning institution, the medieval church, that, as the years passed, became—witness Protestantism—an instrument. With this transformation real present action took the place of routine or supposed routine and the field of action became infinite—witness the art and the science, the exploration and the discovery, the substitution, in every department of life and thought, of free principle for set and Heaven-sent programme or form—while the field of the routine had been finite. With the real action, however, there early rose another institution, the state, and life had in church and state two measures, or two dimensions, instead of one, and medievalism came thus to its dualism. In reality, too, the field of action—it was real action—was made infinite and incommensurable then and there, but, as must now be said, outwardly life was long in discovering or squarely facing the incommensurability. Church and state, as dualistically different, as incommensurable as two institutes could be, for many years remained outwardly rivals for each other's prerogatives, as if each could be itself consistently and yet also assume the form of the other, but the growing instrumentalism and the increasing freedom of real action and the constant opening of the field finally brought—only I do not dare to say just

<sup>4</sup> The incommensurability or—the same thing—the duality of infinity I have considered, not with any claim to originality, but still in my own way, at considerable length in an article, "Dualism, Parallelism and Infinitism," recently published in *Mind* (Vol. XX., N. S., No. 78).

<sup>5</sup> Or, more generally put, in an  $n + 1$ -dimensional field instead of an  $n$ -dimensional field.

when—what the historians are pleased to call their “separation.” The action found itself, as so clearly it knows itself to-day, in a really, not formally, infinite field; it found itself, where real action, so different from routine, must always be, in a field of incommensurable elements. So long as the rivalry of the institutions persisted—thus only expressing and perpetuating the medieval dualism—the field of action was apparently infinite only formally, that is, only with reference to the possible application of the old institute become instrument, and worth in general, as well as truth, continued to be tested traditionally by consistency and conformity, although the tests appeared ever more and more inadequate or absurd, but now that the rivalry is dead, the “separation,” begun long ago, being now virtually complete, the field clearly is, as said before, really infinite and with respect to its parts incommensurable and the obstinate tests of institutionalism and routine have had to give place, so far as finality goes, to the test of instrumentalism—or experimentalism?—and real action. In a word, then, the history that brought the development of the supposed reigning institution into a recognized and freely used instrument, and that at the same time showed life changing from relation to supposedly commensurable factors to relation to plainly incommensurable factors, only tells us in a new way the story with which we are already familiar, namely, the change from uniformity to unity, from the structural dualism of special creation to the functional dualism of creative life, from some actual or given status or routine to free action, to action that we saw to be free because the unity, maintained, expressed, or constantly realized by it, had content of unlimited potentiality, not merely of any given actuality. The potentiality, moreover, did not require that future realization show literal or formal accord with any present plan; in other words, in an important way connecting the earlier story with the later, the unity was so free and its contained potentiality was so unbound that commensurability was not necessary to the factors of the former or the ever realized or realizable expressions of the latter.

Free unity and action, I think, are very commonly appreciated as categories of the present time and that they are our inheritance from the past—even to the point of the action being in a genuine sense creative action—is also fairly well understood, but that free unity, equivalent surely to the only real unity, and real action imply incommensurability is not so well appreciated. This indubitable fact, then, since it bears directly on the present problem of truth and its tests, and particularly on the only instrumental value, but still the instrumental value of conformity and consistency, is what I would here specially emphasize. Even to repeat, no real action can be adequately appraised under one measure; under one measure it would

still be routine; for adequate appraisal there must be at least dual measurement. No real unity, free from the incompleteness of some set uniformity, can be single-natured; it must be at least dually complex. How best to describe the duality—the required minimum of complexity—is of course a real question, but this may be said. Suppose any two measures or standards, any two institutes, that are not commensurable; it is plain—is it not?—that their difference implies for the life which they both serve, first, a static aspect—are they not both set to a certain routine?—and, secondly, a dynamic aspect—are they not *different* parts of the same unity? The static and the dynamic, then,—or say, recalling the history, church and state, offer one possible description of the duality with which real unity must be affected or in terms of which real action must always be appraised. In recent times the disposition has been to neglect the static and uniform—whether as present fact or as an ideal. Yet real unity is not, as many would loosely suppose, aloof from uniformity; free action is by no means superior to, or independent of, routine; unity can be real only through a multiplicity of different uniformities and action can be free only through a variety of routines. Once more, then, real unity and free action imply incommensurability and, this being such a hard and forbidding name, no one can object if I add that “the incommensurable” is necessarily only a collective or unitarian term for that medieval non-conforming trinity, the world, the flesh, and the devil. Of course, there must be always modern ways of sanctifying the incommensurable, but I am not now formulating the proper ritual for a modern church, for the church as free instrument instead of set institute.

And besides emphasizing the fact of unity and action implying incommensurability, whether sanctified or unsanctified, I would emphasize also another closely related fact, as follows: Free unity and real action so truly are our inheritance from uniformity and routine in a past life of supposedly commensurable factors that to take a flatly negative attitude towards uniformity and commensurability or towards the tests pertinent thereto, conformity and consistency, is treachery as disastrous as it is unpardonable. Such treachery, obviously, I have had in mind when I have insisted, among other things having the same object, that the old tests are after all still with us and are with us in a very real form, namely, as instruments—artificial instruments, if you please—and, again, that recent times have shown a disposition to neglect the static element in life or action. The old conditions and the old tests may indeed have lost their quondam importance and prestige, but here certainly is no warrant for setting up plurality and incommensurability, inconsistency and non-conformity, as things intrinsically worthy and so to be



cultivated for their own sakes. To set them up so is in fact only to manifold the old status, no real change other than a merely numerical one being accounted for. Yet the change from institutes to instruments, from the commensurable to the incommensurable, is a real change.

We can see now, as I think, what the test of "going" or "working" means or at least what from its relation to history it ought to mean. Man has become, thanks to his past, not a mere creature, but a freed agent. More than this, he is an agent with instruments either actually at hand for his use or potentially at hand for his invention. He is, as I have frequently liked to describe him, a skilled mechanic<sup>6</sup>—only this is a term that perhaps even more than agent, lacks interest and romance for most people; he is a capable user of well-made instruments, tools, methods, symbols; no longer a soldier or no longer a creature of some external will or power. And, man being this historically, coming up to the present with this inheritance, "going" or "working" can mean nothing more and nothing less than skilful action, the at once capable and effective use of some highly developed instrument. Whatever enables, not just action, but action with the mediation of such an instrument, and not just mere use of this instrument, but its skilful use, is true. In the making and testing of all instruments, however, of all tools, methods or symbols, the medieval tests, conformity and consistency, still hold, and it would not be very difficult to show that in their new rôle of testing the means or instruments of action they really have a larger significance than that which first belonged to them. They have lost much, but they have found more: their whole world; their own soul. Moreover, although I said I was not at this time undertaking to formulate the proper ritual for a modern church, have I not, as a matter of fact, quite unwittingly made at least a very good beginning in that direction? I think, indeed, that it is a matter of history that a good instrument skilfully used will always go a long way towards either consecrating or exorcising the incommensurable.

And just what was the point of so insisting on the use of an instrument being skilful? The point was this. Only skilful use can be productive or creative, and, as has been seen, *creative action is the true action of our modern life*. "Going" or "working," in other words, properly—that is, if judged by the history that has led to it as a test—simply *requires* discovery, productiveness, creation. Ask any good scientist in the laboratory what truth is and, if he fail, as he may,<sup>7</sup> to tell you in words he will at least show you by his acts

<sup>6</sup> Cf. "The Will to Doubt," Ch. IX., *The Doubter's World*, page 224 sq. London, 1907.

<sup>7</sup> Or, alas, as he is all too likely to. Science often seems still too *institutional* and too *structurally dualistic*, too medieval or scholastic, too solicitous for

that anything is true that enables investigation and *discovery*. Productiveness, in short, as well as the use of an instrument, is required by the pragmatic test, when this is estimated historically, and with all that has been said I can hardly need to add that discovery or production, coming only from the skilful use of some method or instrument, always involves the development of new relationships, that is, of relationships to what is not formally like or is not commensurable with what has been. Only so could the test of "going" or "working" meet the honest and honorable demands of modern life. Modern life is itself the *created* product of medievalism.

But this was to be a sociological study and we are now able to take up the special sociological bearing of what has been under discussion. To go at once to the point, the distinction between the old tests and the new, between institute with its routine and instrument with its creative action, between commensurability and incommensurability, between uniformity and unity, is quite parallel to the distinction between organized social life as perhaps best exemplified in any class and the life of the individual person. Any instrument, tool, method, or symbol, any institute which is of course destined to become an instrument, always means actually or potentially a social class, and within the characteristic life of the class, within the life of the class as a class, although obviously this is all very much of an abstraction, uniformity and routine are in order and consistency and conformity may very properly be exacted of both action and thought. Within the class imitation is the characteristic mental process and it is quite pertinent to add that for medievalism life was always primarily a matter of class. With the individual person, however, the unit of modern life, the situation is very different. The characteristic part of the person is invention, not imitation; creative action, not routine. The consistency, then, and conformity, the uniformity and routine of the class, are not properly for him, save as they put at his disposal a highly developed instrument for use in his self-realization, a means to his having part in the creative life of the world. His first loyalty is to the incommensurable; his duty is to the "working" imposed by the new test.

Is it to be wondered that those who have insisted on this test have been charged with individualism, subjectivism, even solipsism? Nor can it be said that the charge is altogether unjust. Just as there has been a disposition, doubtless from the impulsive interest in novelty, to forget the institute in the freedom imparted by its having become uniformity. Science has been, I think, only the medieval institutionalism greatly generalized, much as the mathematics, to which it resorts, has been only a sort of generalized, conventionalized, and de-humanized legal order, a formal discipline abstracted from the material past.

an instrument, so there has been a disposition to forget the class in the sense of personal efficiency that effective use of any method or instrument, always the *milieu* of a class, always imparts. Still, whatever lapses of memory have occurred, and however natural the lapses were, it remains that historically "going" or "working" means only the action that is expressed in the skilful, that is, the creative use of a well-made instrument or method, a highly developed institution, and, as may now be said, also, only the action of an individual person, the medium or instrument of whose activity is an inheritance from the formally organized life, the institutional routine, of some larger or smaller social group. Interpreted in this way, the test of "working" may still involve individualism, but in no such sense as either subjectivism or solipsism would carry. There may indeed be a certain liberation of the individual from the slavery of the class, from the mere routine of the life of a class, but, as he uses the instrument given to him by that life, he becomes, not less, but more a social being than ever, for, leaving the companionship and the loyalty of uniformity and routine, he enters into the richer fellowship of unity and creative life.

So do I find the problems of truth a sociological problem, and I might very well, perhaps much better, leave the matter right here, for the point that I wished really to make—only a timely reminder of the past as a proper source of interpretation for a certain modern idea with an application to sociology—has now been made and, I allow myself to think, does not need further explanation. Among the many suggestions, however, that the foregoing discussion has started in my own mind, there is one, perhaps the one that would least interest anybody else, which I am tempted into heeding and at least very briefly developing. It comes, let me confess, from a most technical region in philosophy, yet I trust I may give it a more than merely technical meaning. Thus, as the ancient Greek Zeno, who argued that the flying arrow must rest and that Achilles, however swift, could never overtake the tortoise, and the modern—or medieval?—German Kant, who formulated certain startling antinomies of space and time and of several other fundamental factors of experience,—as these two notably among others have been at much pains to let us know, in any doctrine of knowledge, and its truth, not to mention other doctrines, there is always the peculiar difficulty of finiteness and infinity, of finite divisibility and infinite divisibility. Space, time, and process, the last whether viewed mechanically as motion or dynamically as expressed in a causal series, are all in the dilemma of needing to be finite and infinite at once. Zeno's and Kant's solutions of the difficulty were what they were, but we must not trouble ourselves directly with them—beyond remarking that



old notions of things generally are commonly found to be only modern ideas under quaint disguises. Thus, to hint at last at what Zeno's paradoxes and Kant's antinomies have to do with the modern test of truth, and particularly with the sociological application given above, who would dream that in the opposition between finite and infinite as found in space and time and process there is nothing more nor less than the two demands, which we have found to be always put upon experience, the social or institutional demand and the personal demand, or say the demand of the formal and the demand of the vital? Yet the finite is the uniformly measured and measurable; the infinite is the informal and immeasurable—including, as should be recalled, not merely the contextually or only negatively immeasurable, but also the incommensurable, the formally quite impossible. A finite space can be only a space limited by some assumed unit of measurement, whether inch or mile; and so a finite time, be the unit second or hour, day or year, age or æon; and a finite process, mechanical or dynamic, is limited not only spatially and temporally, but also by some assumed formal plan or programme, as in the noted and notable case of special creation; but any assumed and determined, or let me say now standardized, unit of measurement, inch or mile, second or æon, or any programme of movement or action has all the character of an institute or instrument and always means, actually or potentially, a social class. So, if I may venture one more interpretation of a much-interpreted doctrine, Kant's finites, all of them, may very well be looked upon as a bureau—of course a bureau *a priori*, but that is only a philosopher's joke—of standards and models, which is always so important to organized social life. Besides standards and models and finites, however, besides measures and instruments, there is always infinity to be reckoned with, and, accordingly, to continue the interpretation, the Kantian assertion that all the basal and primary forms or conditions of experience are with good reason and real cogency infinite as well as finite gets new meaning and very much enriched meaning from the here suggested association of the finite and the infinite with the social and the personal, the formal and the vital. If the finites suggest a bureau of standards and models, the infinities point to the transforming process, the creative life which the bureau is always serving. Thus finiteness and infinity, uniformity and unity, part and whole, the measurable and the immeasurable, the tests of conformity and consistency and the test of "working," the formally actual or possible and the formally impossible, the formal and the vital, in fine, again, the social and the personal or individual, or say even talent and genius, formality and informality or originality, instrument and creative use—these show the Kantian antinomy in its modern dress or show how a modern idea

has remained disguised in the Kantian antinomy. And they show, too, that truth, however broadened and deepened, however liberated, by the new test, can not dispense with the old tests. It were certainly a foolish workman that threw away his measures and tools because he so enjoyed the freedom and efficiency which they had brought him. It were, again, a dishonest person who, having a good time, gave no heed to the bill.

Now, is that which "goes" or "works" true? Yes; and, adopting for the moment the Kantian phraseology, with the same underlying meaning, forms that are with equal necessity finite and infinite are the indispensable conditions, the conditions *a priori*, of all true or valid knowledge; there can be no truth without both formality and originality, without at once the possession of an instrument or method and the productive using of it. Truth thus lies in real use; that is, in having—from the formed past—and in using actively—for the forming future. It is, again, a conscious act in time rather than any present idea that is true. A present idea can be said only to *mediate* a true act. Very commonplace? Doubtless. But it expounds, or exposes, *both* the Kantian *a priori* form and the pragmatic test as having a place in history.

To conclude, in the preceding paragraph I have not been trying to raise aloud and anew the cry of "Back to Kant!" nor would I allow any one with impunity to dub me a neo-Kantian, but I have wanted, I suppose, to bring certain wanderers into some fold or, so to speak, to get them back to church, if not for the sermon, at least for the service. Historical connection and historical feeling have been a need of many recent "isms."

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### CAN SCIENCE SPEAK THE DECISIVE WORD IN THEOLOGY?

IN a forceful paper read at the last session of the American Philosophical Association, Professor Leuba argued that it is a mistaken position to urge, as is so often done, that the fundamental teachings of religion are not under the jurisdiction of science, but of philosophy only. He denied the right of sanctuary in metaphysics for such teachings as that of the existence and nature of God, on the ground that, whatever may be the case as to the God of Aristotle, Spinoza, etc., the God of the actual religions of the world is, and has always been, a concrete existence, and not the Absolute—a personal Being who reveals himself in experience. He is to be known, if known at all, *empirically*, either (1) in immediate experience (mystic

or intuitional), or (2) inferentially, on the basis of immediate experience. Now, as the speaker held, this situation as regards actual accredited religious teachings, despite the contrary statements of many philosophers and psychologists, puts theology distinctly within the field of psychology, which has for its province all types of experience *as such* whatever.

Professor Leuba's paper impressed the present writer as an admirably clear argument and one with sound and useful distinctions. It is to be commended to certain ultra "tender minded" people who appear desirous of keeping their cherished religious ideals inviolate by shutting them up in a kind of intellectual glass case, and refusing, even at the risk of making them spiritually impotent, to articulate them in any efficient way with the processes and exigencies of ordinary life. Is the main thesis of the paper sustained, however, and the conclusion warranted, that psychology is competent to reach trustworthy *scientific* conclusions regarding the *objects* of theological inquiry? Is the time not distant, for example, when the psychology of religion will be able to establish, say, the conclusion of Locke, that "We have a more certain knowledge of the existence of a God, than of anything our senses have not immediately discovered to us," or the contrary one of Professor Leuba, that "Belief in a God seems no longer possible"?<sup>1</sup> I think not; and for the reason that the psychology of religion does not possess, and seemingly can never possess, a body of critically determined and recognized *facts* in the scientific sense.

I do not challenge psychology's right to investigate religious experience. On the contrary, I regard the subject-matter of religion as lying very largely within its field. The seat of religion is assuredly in the inner life, and it is greatly to be hoped, and I think expected, that psychological inquiry will reveal to us with increasing clearness the processes at work in this the most shrouded arcanum of that life, and the laws governing them. If there is really an inviolate sanctuary, or holy of holies, within us, it appears to be the ego itself, not any variety of experience. Furthermore, it is manifest that the accredited results of such inquiry will naturally and properly influence greatly the reflective processes through which each thinker *by himself and for himself* reaches his conclusions, whether of faith or unfaith, as to what in the way of human welfare and promise lies beyond the present pale of cognitive determination. This is quite another thing, however, and a much more restricted thing, than the affirmation that psychology is competent to pronounce as to the objective actuality of the *objects* with which religious experience is concerned. Does any amount of acquaintance with

<sup>1</sup>"The Psychological Origin and the Nature of Religion," page 95.



the mental processes of physicists qualify psychology to decide whether molecules are actualities or whether Mars is inhabited?

A department of inquiry does not become a science merely by adopting critical methods; it is not thereby distinguished from philosophy. To be a science it must also possess *a body of established facts*—critically tested bits of experience—which are recognized by all competent inquirers, and accepted by them with substantially identical meanings. It is on the possession of such unquestioned data that the possibility of experimental verification rests, which is the prime logical characteristic distinguishing science from philosophy, and without which no conclusion can be acknowledged to be scientifically certain. A scientific conclusion is not merely an opinion which happens to be held by approximately all the accredited inquirers in a certain field; it is a statement which may be taken as a universal truth because by a logico-experimental use of accepted facts all competent investigators may be *compelled* to assent to it. For such intellectual coercion a common body of critically determined, admitted facts is indispensable.

But does the subject-matter of the psychology of religion give promise of yielding such a body of facts? I can not see that it does. That subject-matter consists in part of certain modes of external behavior in human beings, but more fundamentally it consists in those distinctive emotions, ideas, and psychical impulses which prompt the behavior and give it its characteristic significance. It is these latter phenomena which constitute the real core of religious experience; and these phenomena have in each case *but one observer*, and so *but one reporter*. They are essentially secret and private. Facts they are, indeed, but not facts the observation of which is open to correction through the common inspection of many investigators. Nor can they full often, even in the same observer, be repeated at will. They are many of them more like historical than scientific facts—the outcomes of factors and situations which can not be reproduced.

Furthermore, Professor Leuba's expectations regarding the psychology of religion require that it should become an *applied* science; for it is never the province of a descriptive science to make declarations as to actual or possible concrete existences, such as the prognosis of a sick man, the arrival of a new comet, or the reality of the objects of religious insight and emotion. The deliverances of pure science are fundamentally hypothetical, which is the reason why they are also truly universal. Physics tells us, for example, that all material bodies tend to move toward each other with a force inversely proportional to the square of the distance; but neither this law nor any other principle of pure physics can by itself assure us of the existence of a material body in any definite location, for example, of

an unknown planet beyond the orbit of Uranus. Only the applied science of astronomy can do that; and it can do it because it introduces into the situation as determinants of the principles and general agencies of pure physics, additional empirical data, accurately determined and largely quantitative. The like is true in mechanics; applied mechanics pronounces confidently as to the load-carrying capacity of a bridge, not merely because of the principles of stress resistance established by pure mechanics, but also because through a multitude of experiments it has learned the strength of the bridge's structural materials.

When now we ask whether the psychology of religion can become in any measure an applied science, the answer seems hopelessly in the negative. The requisite precise data as determinants of the application of the general principles of religious experience (supposing these to have been ascertained) are obviously lacking. What kind of an emotional experience and what amount of it is reliable indication of a supersensible and superhuman stimulus? What kind of intuition and what degree of it warrants one in thinking he has seen God? Is it urged that, if psychology is not able to answer such precise questions as these, yet it may at least so account for religious experiences on physiological and social lines as to make the whole notion of a supersensible stimulus needless, and so one to be scientifically excluded on parsimonious grounds? I reply that I see very well how that result is feasible as regards *individual*—perhaps very confident individual—conclusions; but I do not see how it can be effected *scientifically*—as a coercive judgment for all proficient in the field of inquiry—so long as these religious experiences are essentially private, and there is no way of ascertaining whether the emotions, impulses, and insights under review are alike for the different men who experience them and pass judgment upon them. What sort of a physiological explanation of one's own religious experience is proof that *another man* with a different experience has *not* seen God?

It may be urged that this argument proves too much, since it impeaches all introspective psychology; but the objection is only partially pertinent. The serious challenge which such considerations do bring to introspectional psychology's claim to be a science is, of course, well known. The case of the psychology of religion is especially acute, however, and the argument applies to it *a fortiori*; for in ordinary normal psychology there are abundant indications that the functioning of the vast multitude of individual minds, especially those of the same race, are remarkably alike—sufficiently so to be subject to safe generalizations. In religion, on the contrary, the indications make strongly for the conclusion that different minds function

in a great variety of ways—in such very different ways, indeed, that one man is often quite at a loss to understand the religious life of another. As to physical objects, the thought processes of Laplace and Kelvin were sufficiently alike to admit of substantial unanimity in intellectual results; but how diverse were their theological conclusions! Romanes and Haeckel could come into a very large agreement in biology, and even also in theology on the negative side; for both of them reacted radically from the traditional doctrines. Romanes, however, was able in time to make a new theological synthesis and reach a new faith—an outcome of which there is small promise in the later thinking of Haeckel. This contrariety in theological result in two men who agreed well in their own special field of physical science is evidently due, not primarily to differences of reflective thought, but to differences of religious experience. It is to just this experience that Romanes appeals confidently and properly; and to men who have had, or may have, similar religious experiences, the appeal is suggestive and helpful; but for these thinkers whose religious experience is very different his words must often seem unreal and fanciful.

For philosophers this absence of a common body of religious facts (in the scientific sense) to which appeal may be made is apt to make fatally easy a common form of the assumption fallacy. Religious experience is primarily immediate experience and appreciative knowledge. Now, philosophizing, with its generalizations and pitiless criticism, is very unfavorable to such experience and knowledge. Indeed, there is something like an inverse law between the two. As time goes on, and critical reflection becomes more and more the dominant habit, the mind's power of immediate and original reaction seems to be atrophied and finally to perish. We are all familiar with Darwin's sad comments on his loss of power of response to the esthetic stimuli of nature and the fine arts. For myself Wordsworth's well-known lines might well be made my own:

“There was a time when meadow, grove and stream,  
 The earth and every common sight,  
     To me did seem  
     Apparelled in celestial light,  
 The glory and the freshness of a dream.  
 It is not now as it has been of yore;—  
     Turn wheresoe’er I may  
     By night or day,  
 The things which I have seen I now can see no more.”

In later middle life—as has been repeatedly shown since Professor Osler's oft-quoted address on incipient senility—one is indeed apt to reach the maximum of his reflective powers, but it is with a great price that he gains this philosophic freedom.



Now, this religious situation, namely, that as an inquirer becomes more competent to generalize and criticize he becomes, also, farther removed from the phenomena with which he is to deal—this is in itself one sufficiently unfavorable to sound scientific conclusions, but beyond the difficulty itself is the all but fatal facility which it makes for the assumption that these receding phenomena are unreal in proportion to their inaccessibility. The psychological investigator of religion perhaps feels the religious response and the religious craving no longer. These things for him have lapsed into that limbo of his memory where linger the shades of many adolescent ideals—plans for lofty service, schemes for human betterment, dreams of personal achievements, etc.—programmes which he has discovered can not be realized in this heedless, refractory world; and he easily assumes that his religious experience—possibly a meager and quite conventional one—is of the same stuff throughout as these youthful cloud castles. The ideational part of that long-past experience seems easily explainable as the projection, under the suggestive conditions of some ecclesiastical environment, of the mind's craving for continued betterment, and that form of the craving for betterment being no longer felt by the philosophic inquirer, its real character and significance are not appreciated. Naturally it is but an easy step further to conclude that the religious experience of other men, indeed of all men, however larger in *amount* it may possibly be, is none other in significance and validity than that now vanished phase of the inquirer's own inner life. Now, evidently in such situations assumption, like charity, easily covers a multitude of (logical) sins, leading to conclusions which to the inquirer himself may wear the *garb* of science, but which have no just claim to its authority.

Wherefore, I conclude that those thinkers who have denied that science can speak the decisive word in theology, and have maintained that when science has done its best, religion will still remain the field of individual intuition and personal life venture, have reasoned well.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Mechanistic Conception of Life: Biological Essays.* JACQUES LOEB. Chicago: University of Chicago Press. 1912. Pp. 227.

The title of this volume is somewhat misleading to the philosophical reader. It leads him to anticipate that he will here find a mechanistic interpretation of life. What he finds, though, is not an interpretation at all, but a collection of studies exhibiting certain mechanisms of life. Now, it is surely one thing to demonstrate, let us say, the chemical processes in-

volved in a tropism; and it is a very different thing to prove (or even claim) that tropisms are *nothing but* chemical processes. The latter enterprise might result in a mechanistic hypothesis of life; but of this there is scarcely a vestige in Loeb's book. What the author gives us is a valuable collection of experimental studies in biological chemistry. They are such work as even a vitalist like Driesch might have performed.

What is it, then, that warrants the title, "The Mechanistic Conception of Life"? Simply this: Loeb supposes that his recorded facts point unwaveringly toward such a metaphysic, and he often repeats this assurance at the close of his most striking empirical observations. So frequently does the reader come upon such utterances that he may be deceived into thinking that he is reading an interpretation of life logically similar (though contrary in doctrine) to Driesch's "Science and Philosophy of the Organism" or Bergson's "Creative Evolution." Whatever else critics may say of these two monumental philosophical undertakings, they must admit that these do not merely point to a view of life; they actually develop, more or less minutely and coherently, that view together with its wider implications. But it is precisely this which Loeb does not attempt, much less accomplish.

To be persuaded that such a criticism is fair, the reader has only to consult the opening essay, whose title is the title of the book. "It is the object of this paper," so runs the first remark, "to discuss . . . whether our present knowledge gives us any hope that ultimately life, *i. e.*, the sum of all life phenomena, can be unequivocally explained in physico-chemical terms." Were we to take each word of this passage in earnest, we might expect the author to reach the conclusion that there is hope of reaching a complete physico-chemical explanation. But evidently we must not construe so rigorously. For after a review of the now pretty familiar facts about artificial activation of ova, the determination of sex, and the mathematical relations in heredity, he finishes thus: "The solution of the riddle of heredity has succeeded to the extent that all further development will take place purely in cytological and physico-chemical terms" (p. 23). And, concerning psychical life, he adds: "Our wishes and hopes, disappointments and sufferings, have their source in instincts which are comparable to the light instinct of the heliotropic animals. The need of and the struggle for food, the sexual instinct with its poetry and its chain of consequences, the maternal instincts with the felicity and the suffering caused by them, the instinct of workmanship, and some other instincts are the roots from which our inner life develops. For some of these instincts the chemical basis is at least sufficiently indicated to arouse the hope that their analysis, from the mechanistic point of view, is only a question of time" (p. 30). And the essay ends with this remark: "Not only is the mechanistic conception of life compatible with ethics; it seems the only conception of life which can lead to an understanding of the source of ethics."

In Loeb's facts, however, the reviewer is unable to discern the least evidence for the above assertions and hopes. That the organism is composed of chemicals and varies with their processes, is a fact that no longer

calls for proof. But that every relation into which chemicals can enter and to which the organism can react is a mechanical relation, is not merely an unproved presupposition; it is one which can be defended only by foisting upon the term, "Mechanics," a connotation which it has never enjoyed and which is quite repugnant to the mechanistic philosopher and scientist. As the physicist understands it, mechanics is the science of the action of *forces* on material bodies. Technically it is divided into two branches: statics, which considers forces in equilibrium; and dynamics, which has to do with forces non-equilibrated and hence generating motion. Now, if words are to be useful in serious discourse, they must preserve an identity of meaning. Mechanism must signify mechanism. What the man of physics lets it stand for, that must it also represent in biological discussions. But clearly Loeb's usage of the term can not be identified with the familiar one. Many passages from his pages might be cited to prove this; but I shall adduce only a single exceptionally obvious one.

In the essay on "The Significance of Tropisms for Psychology," Loeb says that, while heliotropic phenomena are determined by the relative rates of chemical reactions occurring simultaneously in symmetrical surface elements of an animal, "there is a second class of phenomena which is determined by a sudden change in the rate of chemical reactions in the same surface elements" (p. 54). This second class Loeb distinguishes from tropisms,—and quite properly, too. He designates it with the expression, "differential sensibility." Such sensibility is used by Jennings and others as evidence against the tropism hypothesis of life; but Loeb deems this improper. "If we wish to trace all animal reactions back to physico-chemical laws," he argues, "we must take into consideration besides the tropisms not only the facts of the differential sensibility, but also all other facts which exert an influence upon the reactions" (p. 55). "Ideas can also act, much as acids do for the heliotropism of certain animals, to increase the sensitivity to certain stimuli, and thus can lead to tropism-like movements or actions directed toward a goal" (*ib.*). Now, all this is an amazing,—yes, even a bewildering concession to non-mechanistic hypotheses. In one respect it surrenders the case, while in another it begs the question. It does the former in that it admits the difference between tropisms and reactions to intensity changes; for assuredly an animal which responds to the increase or decrease of stimuli *in successive moments* is responding to something that can not be described in genuine mechanical terms, such as mass, velocity, momentum, force, or the like. It is, of course, responding to acceleration and retardation of some sort; but these are derivatives, ratios of functional increments to variable increments,—in short, peculiar *relations* between forces and space, and time. But what does this imply, if not that an organism with differential sensibility *is stimulated by time*? Or, more precisely stated, is it not responding to a stimulus containing as a constitutive part a duration? What is acceleration if not a *change* of velocity per instant? And what is change if not at least a time-character? As Spaulding has clearly shown,<sup>1</sup> an acceleration is not a punctiform entity; *i. e.*, it does not exist at

<sup>1</sup> "The New Realism," pp. 209-212.



one position in either space or time, but is rather a one-one correlation of the terms of a *series* of velocities with the instants of time. Now by all odds the most significant feature of it is that it is a relational complex extended in time. This fact makes obviously impossible the reduction of it to a quantum of force. It is not a force at all, it is a relation of force to time. And herein appears the difficulty of the would-be mechanistic philosopher. If Loeb grants the existence of a differential sensibility, he must grant also that organisms are affected by other things than mechanical forces. He must admit that the behavior of an animal at a given moment can not be deduced from the pattern of physico-chemical forces in and around it at the previous instant. For a reaction to a change is not a reaction to anything *in* the previous instant; it is a reaction to a relation *between* some character of that instant and a character of the succeeding instant. But if a temporal series of relations can stimulate an organism, into what depths of despondency must the mechanistic philosopher fall? How can he ever again hope, with La Place, to deduce the entire state of the material universe at any desired instant, if only its condition at some one other instant is fully made known to him? The momentary state of affairs is not the sole determinant of the next. The world is full of fore-and-aft connections. These are not "spiritual" nor "vitalistic" nor even psychical, so far as I see; they are merely temporal. But neither are they mechanical in the generally accepted and historical meaning of the adjective.<sup>2</sup>

Emphasis has been here placed upon this difficulty in Loeb's presentation because, in the reviewer's opinion, it is at once the most insidious, the most general, and the least noticed of all mechanistic misinterpretations. It seems to be the original sin and orthodox error of the scientific mind to suppose that whatever involves, in any manner whatsoever, mechanical factors or is in any regular way related to them is itself mechanical. When, in the last passage cited, Loeb says that the mechanistic biologist must take into consideration all facts which exert an influence upon reactions, he believes that he is not damaging his arguments for out-and-out mechanism; and he can believe this consistently only if he falls into the error I have indicated. He must suppose that, if one starts with chemical processes and observes only what influences them, one can

<sup>2</sup>This is not saying that accelerations and retardations are not reckoned with in mechanics. They certainly are. And they are not misconstrued in mechanical computations. But what I insist upon is that they are not admitted as *extra* forces (energies) over and above those moving bodies which figure in their differential ratios. For instance, the displacement of the body *A* by the body *B* which impinges upon *A* is a function of *B*'s momentum at the instant of contact, regardless of the derivation of the momentum. That is to say, *B* may have been moving with uniform velocity, or with some acceleration or some retardation; but this makes no difference in *A*'s displacement. Here we have, I believe, an exact and demonstrable clue to the fundamental difference between organic and inorganic behavior. "Mere matter" (the nickname for the mechanical order of events) varies with instantaneous energetic conditions, while "life" (another nickname) varies not only with such, but also with serial and other time relations between those conditions.

not pass beyond mechanism. Logically, this is identical in form with the idealist's error of supposing that whatever is related to the cognizing process is mental. Quite apart from the gratuitousness of the assumption, the latter begs the whole question. If all that is related to mechanism is mechanical, of course life is only the elder brother of the automobile. And all biological discoveries are not proofs but merely illustrations of mechanism. Our metaphysics is settled in advance of research.

How far Loeb's discoveries herein recorded fall short of being proofs of his mechanistic philosophy of life may be seen in the four most important essays,<sup>3</sup> which deal with the problems of artificial fertilization of ova and the rôle of salts in the preservation of life. Lack of space forbids my reporting more than one instance from those fascinating pages. Loeb has successfully produced artificial parthenogenesis in a number of lower marine animals, sometimes by agitation of the eggs, sometimes by pressure, and sometimes by brief immersion in chemical solutions (cytolytics). What happens in all these experiments? Loeb finds that an outside membrane of the egg is broken, chafed, dissolved, or precipitated; and that probably this "facilitates the diffusion of oxygen or of HO ions (bases) or other substances necessary for the development into the egg" (p. 151). In other words, the formative stimulation is not formative stimulation at all, but only a destruction of peripheral cellular matter whose removal enables a protein substance of that layer to absorb water and swell and pass on to the egg some food or stimulus which sets up the constructive ovarian activities. To interpret this situation as evidence of the mechanical character of life is quite as illogical as to argue that the actors on a theater stage are made of asbestos because they can not begin performing until the asbestos curtain between them and the audience is raised.

There is a round dozen of other flaws in these pages which catch the philosophical reader's eye. Two of these ought to be at least mentioned here. In every inference from observed fact to mechanistic hypothesis, Loeb seems to presuppose that inflexible regularity of behavior under definite *physical* conditions of the environment and of the organism indicates the exclusively mechanical nature of the organic reaction. We have already pointed out the error of identifying physical with mechanical; there now remains the other aspect of this presupposition, namely, the implicit doctrine that inflexible regularity of reaction must be mechanical. Expose the larvæ of *Balanus perforatus* to sunlight, and they move toward it. Place them in the light of a quartz mercury lamp, very rich in ultra-violet rays, and soon the larvæ move away from the rays. These tests are alleged to indicate that the responses are exclusively mechanical. Now, they can not be this merely because the stimulus is physical; for if that fact were proof of mechanical reaction, then there is no problem at all. All life, by virtue of its adjusting itself to a physical setting, declares itself to be purely a machine, according to such an argument. We must assume, then, that Loeb founds his presupposition on the other aspect of the proposition, namely, upon the variation of reaction with stimulus.

<sup>3</sup> Nos. 6 to 9, inclusive.

What now is the logic of this assumption? It reduces to the following primitive form:

$$\begin{aligned} A &= f(B), \\ B &= M; \\ \therefore A &= M. \end{aligned}$$

That is to say, the larval movements are functions of ether wave lengths in the stimulus. The ether waves are mechanical. Hence the larval movements are, too. Comment on such logical procedure should be superfluous.

The other error to be noted is one which plays no part in the specific arguments of Loeb. I cite it only because it is wide-spread and easy. Throughout this book statements are made like the following: "Heredity . . . is perhaps the most rationalistic part of biology" (p. 23). "Tropisms . . . pave the way for a rationalistic conception of the psychological reactions of animals" (p. 60). "It is already possible to reduce . . . the tropisms to simple rationalistic relations" (p. 61). I think it only equitable to assume that the author does not mean "rationalistic" here in either its standard connotation or its accepted philosophical meaning. He does not champion the rationalism which is historically opposed to empiricism. And it would be unfair to charge him with using the term in its theological sense, namely, as opposed to supernaturalism; for such a meaning makes nonsense of his assertions. And finally he can scarcely be accused of Kantian rationalism nor yet of Platonic rationalism; for he scorns all such theories as mere word play. I infer, therefore, that in the above context "rationalistic" means only "rational," viz., deductively established. If it is permissible to place this construction upon the word, the error latent in its usage appears. Loeb is ever presupposing that a theory of life can be rational only if it is mechanistic. Nowhere does he say this unequivocally; but the creed cries shrilly from between the lines. Such grotesque metaphysical leaps are all too common, and sprightliest jumpers are to be found among the natural scientists who, like Loeb, ridicule philosophy and her inquirers. They are the best justification for philosophy's earnest continuance and for the encouragement of stiff logical analysis.

To halt here with comment would convey a false impression as to the reviewer's verdict on the volume. Loeb's theory is lame, halt, and blind,—a simple tropism (as he himself would have to describe it). But the experimental data and results which he reports can not be recommended too highly to the philosophical reader. Although some of them are now out-of-date, they furnish a vivid picture of a field of research which will some day upset many of our cherished misconceptions and teach us to see the world with new eyes.

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## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. December, 1912. *La méthode pathologique et le langage actuel* (pp. 545-567): F. LE DANTEC. — Objections to the analytic method on account of its tendency to isolate elements that really have no existence outside of a complex whole. *La signification et la valeur du pragmatisme* (pp. 568-601): H. ROBOT. — Pragmatism bridges the gulf between the intelligence and the heart in which A. Comte saw the chief characteristic of the spirit of modern times. *Vers une nouvelle conception du temps?* (pp. 602-616): J. PÉRÈS. — Time is "the condition of that which not only has not its cause in itself, but also imposes on us, in order to be thought, a regression from cause to cause, and also an anticipation of ends, themselves less than more remote ends." *Revue critique*. F. Le Dantec, *Contre la métaphysique*: F. PAULHAN. *Analyses et comptes rendus*. Meyerson, *Identité et réalité*: A. PENJON. Larguier des Bancelis, *Le goût et l'odorat*: J. DAGNAN-BOUVERET. Dr. J. Grasset, *Traité élémentaire de physiopathologie clinique*: PH. CHASLIN. J. de la Vaissière, *Éléments de psychologie expérimentale*: TH. RIBOT. A. Marcron, *La morale par l'État*: M. CONSTANT. *Notices bibliographiques*. *Revue des périodiques étrangers*.

Freud, Sigmund. *The Interpretation of Dreams*. New York: The Macmillan Company. 1913. Pp. xiii + 510.

La Mettrie, Julien Offray. *Man a Machine*. Chicago: The Open Court. 1912. Pp. 216.

Myers, Philip Van Ness. *History as Past Ethics*. New York: Ginn and Company. 1913. Pp. xii + 387. \$1.50.

Rolfes, Eug. *Aristoteles Politik*. Leipzig: Verlag von Felix Meiner. 1912. Pp. xvi + 323. 4.50 M.

Seligman, Edwin R. A. *Essays in Taxation*. New York: The Macmillan Company. 1913. Pp. xi + 707. \$4.00.

Wundt, Wilhelm. *Die Psychologie in Kampf ums Dasein*. Leipzig: Alfred Kröner. 1913. Pp. 38. 1 M.

## NOTES AND NEWS

At the meeting of the Aristotelian Society on April 7, Professor Josiah Royce was elected a corresponding member, and Mr. A. C. Ionides was elected a member. Mr. W. W. Carlile read a paper on "Kant's Transcendental Esthetics, with some of its Ultimate Bearings." Kant's *a-priorism* was based on the view that necessary truth tells us not only what is, but also what must be. It could only do this, Kant held, because it was of a *a priori* origin. But in as far as necessary truths rest on the law of contradiction, it must be the case that the denial of them would contradict at the end of the sentence some statement made or implied at its beginning. If this was so, however, their origin could have nothing to do

with ante-natal inspiration. Kant's mathematico-metaphysical speculations, at the same time, had led indirectly to the recognition of the axiom of free mobility as the basis of geometry, thus showing that the subject-matter of the sciences was thoroughly materialistic, and all manufactured articles might, at the same time, be regarded as the tracks of voluntary motion in plastic material. The fact of their origin having that feature in common with the origin of geometrical figures helped to explain the fact of the application of geometry to the things of the outer world—to very many of them directly, and to others indirectly. The paper was followed by a discussion.—*Athenæum*.

A CONFERENCE on the Relation of Law to Social Ends was held at the College of the City of New York and at Columbia University on April 25 and 26. The following papers were presented: "The Philosophy of Law in America," Roscoe Pound; "The Ethnological Approach to Law," A. A. Goldenweiser; "Jehring's Theory of Law," Isaac Husik; "The Relation of Legal to Political Theory," W. W. Willoughby; "Responsibility," H. Rutgers Marshall; "The Criteria of Social Ends," J. H. Tufts; "The Conception of Social Welfare," Felix Adler; "Law and Progress," G. W. Kirchwey; "The Content of Social Justice," Simon Patten; "Justice and the Individual," G. W. Cunningham; "Our Litigious System," E. N. Henderson; "The Principles of Judicial Legislation," M. R. Cohen; "The Preamble to the Constitution," G. A. Black; "The Social Sciences as the Basis of Legal Education," William Draper Lewis.

THE Trustees of Columbia University have formally accepted the proposal made by the Austrian Ministry of Education for the establishment of an exchange of professors between the universities of Austria and the universities of the United States. George Stuart Fullerton, professor of philosophy in Columbia University, was nominated by the Austrian Minister of Education for appointment as exchange professor for the academic year 1913-14.

A JOINT session of the Mind Association, the Aristotelian Society, and the British Psychological Society, will be held on June 7 and 8. Papers will be read on the following subjects: "Are Intensity Differences of Sensation Quantitative?" by Messrs. C. S. Myers, Dawes Hicks, H. J. Watt, and William Brown; "Memory," by Dr. Arthur Robinson; and "Can there be Anything Obscure or Implicit in a Mental State?" by Messrs. Henry Barker, G. F. Stout, and R. F. A. Hoernlé.

AT the ceremonies connected with the opening of the Phipps Psychiatric Clinic of the Johns Hopkins University Hospital, addresses were given by Sir William Osler and Professor William McDougall, of Oxford University, Frederick R. Mott, F.R.S., of London, Professor Heilbronner, of Utrecht, Professor Bleuler, of Zurich, and Professor Orovino Rossi, of Italy.

THE second convention of the Società Italiana di Psicologia was held in Rome during the last week in March. The following questions were discussed: "The Classification of Mental States, Mental Phenomena, and the Nervous System," and "The Psychological Problems of Psychotherapy."

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### TIME AND THE PERCEPT

THERE are two closely affiliated arguments against every realistic theory of perception, which deserve to be considered again because they touch the most important and most modern of philosophical issues, namely, the problem of time. One of these arguments builds upon the fact that, in every perceptive act, the agent relates the "immediate content" (the "pure datum") to a host of prior data and fuses somehow the absolute present material with certain antecedents in such a manner that only the resulting fusion, and never the "immediate content," constitutes the percept. From this fact it is inferred that we can never perceive things "as they really are"; for is not every percept shot through with the ghosts of past things? The second argument I refer to touches, not the past and its summing up, but rather the future. And now pretty much the same assertion is made as in the former case. Perceiving, we are told, involves conation, attention, expectation. It occurs only in purposive conduct, and its "content" or "datum" is integrally related to a foreseen and desired state of affairs. This state of affairs may not—and probably does not—exist "absolutely"; certainly it does not at the instant of perceiving. Therefore the percept is "humanized" and in the same measure stripped of its apparent, independent, objective status.

In short, anti-realists urge that, in perception, both the past and the personally colored future of entities are blended with their actual present nature; and hence that we never perceive things "as they are." The "pure datum" is vastly less than the percept, and thus misrepresents reality. Also, what is added to it and modifies it is not drawn from the real order (at least not entirely), but is purely "mental."

That this theory underlies the thought of even many persons who openly accept the reality of temporal relations is apparent (*a*) in a manner of speech current in scientific and philosophical circles, and (*b*) in various well-established methods of experiment.



(a) When a philosopher says that he does not perceive his study lamp "as it really is," he commonly identifies the present tense of "to be" with its existential connotation. If we purposely look away from the space factor in determining an existent, we may say that he equates "the lamp as it is" with "the lamp as it now is." The lamp of yesterday, in so far as it is not identical with the lamp of the given instant, is at this instant non-existent. And so, too, with the lamp of to-morrow. Thus a radical difference is set up between the now and the not-now; a difference much deeper than that between past and future. Many persons will hurry to deny that they mean any such thing as this. But they frequently accept the view in practise. We find them doing so most conspicuously in their arguments over empirical instances in psychology.

(b) Suppose they are considering the influence of adaptation (or of after-images) upon succeeding vision. The answer is sought in the following fashion. After exposing his eyes to a bright red light, the investigator quickly inspects papers of various colors, attempting to order them, let us say, with respect to their degrees of saturation. The result is said to indicate that he overestimates the saturation of the green series. What warrants this statement? The fact that a piece of green paper at which he looks is "really" much duller, much more tinged with gray than he perceives it to be. And how do we know that it "really" is duller? Why! A person looking at it *in the same instant* with eyes uninfluenced by *earlier* lights perceives its dulness. In other words, the instantaneous condition of the paper is its "real" condition; and the purely momentary condition of the eyes is that under which they see "truly." Now, this presupposition is the chief support of much reasoning in psychological investigations of errors, illusions, and the like. And, as the reader will have no difficulty in discovering its employment in many similar instances, I shall assume that it has been made sufficiently clear. It is the purpose of the present study to show that this use of the adjective, "real" is (a) inconsistent with the results of every more careful analysis and classification of ontological terms, such as "existent," "non-existent," "real," "unreal," "subsistent," etc.; and (b) when thus inaccurately employed becomes anti-realistic only through its highly questionable metaphysical presupposition about time, namely, the presupposition that specific temporal relations are, in the metaphysical sense, unrels. Once discard this opinion, and we may remain thoroughgoing realists, while conceding all the empirical facts about perception which the psychologist correctly distinguishes, but erroneously tickets.

*The Inaccurate Terminology.*—The reader familiar with modern philosophical literature hardly needs to be reminded of the vast dif-

ference between the connotation of "real" in the experimenters' assertion above cited and the meaning of the same word in works on logical analysis. And he would be bored by detailed illustrations and proofs of that difference. So I shall dismiss this point with the summary declaration that *in all modern logical analyses, however divergent in their other results, there is a general agreement that spatio-temporal entities differing only in their spatio-temporal positions do not differ with respect to their reality. At most, they differ with respect to existence.* Or, to put the matter concretely, Socrates is not unreal by virtue of having drunk hemlock in ancient Athens; his death made him, at most, non-existent. In the ordinary speech, as in the technical, existence preserves something of its original meaning; it is a "standing out" in the spatio-temporal order. But reality, in none of its many conflicting definitions, is a mere prominence; nor does it vary with any sort of prominence.<sup>1</sup> Thus, when we speak of "real life," we do not refer to any historical period in anybody's career, but only to the whole or some part of life, as distinct from Thackeray's imaginary people and their adventures or from our own erroneous views of life. "Real life" is life past, present, and future; and no moment in it is more real than any other. Once more we may go back to the root of the word itself for insight into its connotation; "real" is that which pertains to a "thing" or "state of affairs"—and thus it is the "thingishness" of an entity, rather than its prominence in space or time, that leads us to call it real. Of course, men may dispute as to what "thingishness" is, and that they have done these many ages—but all such controversies do not touch the distinction we have just indicated. Whatever a "thing" and its characters may be, they certainly are not merely conspicuous positions in either space or time.

*Consequences of Adhering to the Erroneous Terminology.*—It is a common thing to hear laymen and those philosophers who, for artistic or other personal reasons, look askance at modern logical analysis, declare that this line of research is barren. It is said that what Meinong, Husserl, and Russell have been doing in their various directions amounts to nothing more than perverted mathematics or a revival of scholastic logic-chopping and the futile multiplication of strange names and queer symbols that mean either nothing at all or something already more simply known. Why spend years over existential and non-existential propositions? To what end invent a universe of subsistents? Wherefore worry over the class of all classes? Why waste precious time searching out the assumptions

<sup>1</sup> For a lucid, compact, and pretty satisfactory definition of all fundamental ontological terms, cf. Montague, in "The New Realism," page 252 ff.

behind the practise of ordering colors with respect to intensity? And so on interminably.

The implication of all such queries is that logical analysis has no practical bearings upon the vital questions of philosophy or of life. And were the implication defensible it would spell the early death of this new species of investigator who has arisen to plague the world with his curst hard reading. But I think that, in the problem now under inquiry, we have an ample reply to that kind of criticism. For them logical analysis readily brings to light a group of presuppositions behind the loose meaning of "reality" which involve a whole philosophical system. This system, moreover, embodies a number of propositions which, if not absurd, are at all events incompatible with a host of every-day facts. Furthermore, out of those same propositions there springs—logically, if not genetically—the so-called mechanistic theory of the world, a theory false at once to mechanics and to the world in its basic contention that both the past and the future efficiencies of all things are summed up in the absolute present.

Inasmuch as many scientists assume frankly that this pseudo-mechanistic hypothesis alone can serve as postulate to their special interpretations in physics, chemistry, biology, etc.; and inasmuch as these latter are shaping more and more decisively men's views of the world and of human conduct, would logical analysis seem an altogether futile enterprise, if it were able to expose half as much as is above claimed? I think not, and I shall now attempt to justify the belief by presenting three of the most serious implications in propositions involving the erroneous meaning of "real" under discussion.

*The Three Fatal Implications.*—Let us first repeat the original anti-realistic argument wherein we found the erroneous connotation of "real." The percept—so it runs—is not a real; for it is composed, on the one hand, of memories and after-effects of earlier experiences, while, on the other hand, it is also qualified somehow by anticipations and directed efforts. Now, this opinion goes too far toward identifying the real with the tangible and physically accessible; and it leads us into the following three difficulties:

(a) It denies the existential status to the continuum within which all existences are to be found. For it restricts that status to entities having a unique position in the time continuum, and denies it to (i) all relations among those entities as well as to (ii) all entities having other than the particular unique position called "the present."

(b) It upsets the popular and the philosophical correlation of reality with efficiency. The result is that it forces us to regard un-



reals as efficiencies of *the same sort* as physical complexes and to count as unreals all past physical events.

(c) It makes incomprehensible—and even absurd—the origin, the perfecting, and the utility of the perceptive apparatus, the memory powers, and the knack of adjusting with reference to the future.

(a) The first difficulty is the least obvious. But I think it can be discerned without prodigious effort. Time is a continuum and, as such, has no position within itself; for it is not a position, but rather the class or assemblage of all positions temporal. Hence, the loose usage of the term “real” which we are criticizing forces upon one the doctrine that time is unreal; for certainly time itself is not “really present” and thus not presently real. How easy to transform such a proposition into the Kantian thesis that time is only a mode of apprehension! And yet this ominous possibility is not the most objectionable feature. The deadly consequence is that existents are reduced to mere positions within a non-existent order, and likewise reals reduced to a species of unreal which is distinguished only by a peculiar conspicuousness. I do not think that such a view is internally contradictory, however much it sounds so. It is conceivable that a complex may have a complex character which is the contradictory of the characters of each *individual* element figuring in it. Thus, life may be a complex of lifeless entities, color may be a complex of colorless factors, and the mass of a physical body may be composed of a system of massless motions. But all this is possible only under one condition, and that condition brings to light the full depths of the implication under debate. What the condition is appears from a study of the nature of complexes and their specific characters.

A complex may derive its specific character from either its individual elements or the relations into which these enter. Analytically, no other source is discernible. If the complex does not get its peculiar nature from the elements, it must get it from their interrelations. But elements enter into relations only in so far as they subsist in some “field” of differentiation (*e. g.*, in a continuum). It follows, then, that wherever interrelations constitute a complex-character, there must be a logically prior principle of differentiation other than that one which characterizes the elements in their intrinsic elemental features. If, therefore, the real is merely a complex-character of interrelated unreals whose elements are related in the time continuum, it follows that this time continuum (that is, its principle of differentiation) is logically prior to reality. Hence, we fall into a contradiction if we say that past and future entities and relations are unreal *because of their time positions*. For this amounts to saying that a proposition may have a presupposition which negates it.

Reality presupposes the time continuum, and this time continuum as such is unreal, according to the argument. Could anything be more impossible? For it avers that a real proposition may (in this case, at least) imply an unreal proposition.

There remains a second aspect of this same logical difficulty which I shall here describe and, in a later passage, discuss illustratively. The loose usage of "reality" under debate leaves us with a defective *fundamentum divisionis*, when we come to classify entities with respect to their reality and unreality. If the real is defined as the absolute present, and the unreal as whatever occupies a temporal position other than the absolute present; then we are at a loss as to the status of non-positional time characters.<sup>2</sup> We can separate the world of events into the Now and the Not-Now readily enough, but we can not put into either class the relations of the Now to the Not-Now. *For a relation between a present event and a past one is neither present nor past*, any more than the relation between the point *A* and the point *B*, in a space system, is at either *A* or *B*. As James and Bertrand Russell insist, the latter relation is the line or distance between the points; and likewise in the present instance, I could add. No order is a position, and hence the time span from this morning's breakfast to this evening's dinner can not be placed at any present, past, or future. Therefore, we must say that it and all durations are neither real nor unreal. That such an interpretation must be most unsatisfactory is quite apparent.

(b) The most natural and generally accepted difference between the real and the unreal is the pragmatic one. The real is whatever "makes a difference." A little reflection shows that this definition is inadequate, in that anything and everything may make a difference to a person's conduct provided only that the person broods over it, believes it, takes it seriously. Nightmares may drive a man into or out of the liquor habit, and preposterous superstitions mould his business practises. In view of such familiar facts people qualify the broad pragmatic definition by adding that the real makes a difference, quite apart from its being thought about. A real, then, is identified with environmental efficiency.

Now, I hold no brief at present for this familiar interpretation. I wish only to point out that those persons who assert that a percept is not real *because* it contains past factors and future bearings fall into contradiction if they say that a plate of beans is real *because* it makes a difference to a starving man, while a dreamed plate of the same viands is unreal *because* it will not stay in the stomach. Nothing less than a thorough separation of reality from power will do, if

<sup>2</sup> To simplify the discussion, I shall waive considering non-existential propositions such as the mathematical.

one is to accept the meaning which is now under fire. Every significant connection between them must be ruled out, and for the reason that past events have present efficiencies, and present events are often (if not always) inefficient in the absolute present. Hence the twofold difficulty of reconciling the presence theory with the potency theory. If the beans I ate an hour ago are now nourishing me, they are real, according to one definition and unreal according to the other. And if we insist upon telescoping the two theories, we have to say that only a difference in some absolute present is a real difference; and therefore all differences established between two more or less widely separated moments are not real, inasmuch as they are not located at any instant whatsoever, any more than a relation between moments is so located. And so we come to the paradox: Efficiency is an affair of cause and effect; the effect is later than the cause; hence the "difference" which the cause makes is not located either at the instant of the cause's occurring or at that of the effect's; therefore no efficiency makes a real difference and for this reason can not itself be real, under the definition. This same point may be stated reversely thus: A difference is real only if it is located at some moment; hence the difference-making entity (event) and the entity (event) in which the difference is made must be absolutely simultaneous with respect to the factors involved in the establishing of the difference. But no causal activity is thus instantaneous (with the possible exception of gravitation); hence no cause is real (as cause).

For the man who sees the force of this paradox there is only one course open, provided he insists upon clinging to the presence theory. He must boldly cast off the popular notion that there is any connection between efficiency and reality. He must be even bolder; he must assert that all past and future physical events and all changes of every nature are unreal. In short, he must identify the real with the pure Immediate, denying therewith that this Immediate has any real relation with anything past or future. All of which is a ponderous way of alleging that such a person must defend a ridiculous proposition.

(c) In these days, few readers allow themselves to be swayed perceptibly by such dialectic as has just been invoked. It is with some relief, then, that I turn to the third difficult implication. Here we deal with matter-of-fact and common-sense impressions. The definition we have been criticizing makes incomprehensible the origin, the perfecting, and the utility of the perceptive apparatus, the memory powers, and the knack of adjusting to future situations. This objection I regard as the most serious, and I think it shows itself



off to best advantage to the eye that has learned to scorn or suspect formal paradoxes and reductions.

Of all facts known to man, none is surer than the intimate connection between structure and efficiency in organisms. The simpler the body, the slighter its capacities and the narrower its range and variety of successes. We may doubt evolution, we may look askance at the survival of the fittest, and we may discard the Mendelian law with a good show of reason; but who would dare suggest to-day that a man's powers rank below those of the ape, or that the difference in efficiency between man and ape is not measured very precisely by the difference in the elaboration of their respective nervous and muscular systems? Be one's metaphysical theory what it will, it will freely admit as virtually axiomatic the *efficient* parallelism of structure and function. And yet this virtual axiom is contradicted by the implications of the definition of "reality" which we have been criticizing. The contradiction arises in the following manner.

On the side of structure, it is intricacy and integration of constituent organs that are the two most conspicuous marks of high capacity. On the side of function, these are paralleled by dexterity (motor and intellectual) and the interrelating of experiences. It is in this last that the difficulty of the presence theory of reals appears. The highly developed creature, as we say colloquially, "learns by experience,"—which is a very inaccurate way of describing the fact that the creature somehow reckons with past situations in each fresh one. The reckoning need not be genuinely computative (intellectual); it may take the form of motor adjustments, as in the slack-wire walker who is learning his tricks. What he carries over from each last imperfect attempt to each fresh try is some motion which helped him keep his balance gracefully. How this is accomplished, we have not here to inquire. Let us merely note that it is accomplished. And now the difficulty shows itself full length: *if the real world is absolutely immediate (purely present), then it is the lowest organisms which adjust most successfully and the highest organisms which adjust most unsuccessfully to real conditions.* This hardly calls for explanation. In a world of pure presences, where all past and future conditions are as unreal as chimeras, all activities and all relations and all entities of every real type are packed into the one great Now. And so the animal which reacts most exclusively to this Now gains most accurately its real bearings. Plainly that animal is the amœba—or perhaps the bacillus, which takes thought neither of yesterday nor of tomorrow. Man, on the contrary, is constitutionally a Jack O'Dreams, living in a welter of unrealities which he, poor fool, mistakes for the most solid stuff of the world. In memories and in anticipations and in hopes he spends the greater part of his life, sleeping and waking

alike. What is still worse for him, he regulates his behavior less by the data of the moment than by their relation to those very unrealities. Is it any wonder, then, that he finds life a troublous mystery which all his cunning can not solve nor any prayer of his alleviate? For he is in the same boat with those whom he calls insane; he lives a great fiction and deceives himself therein.

All this states the absurdity of the presence theory extremely, yet without unfairness. And I think we may now regard it as untenable, dialectically and empirically. But if we do, a much vaster problem confronts us; the problem of reinterpreting reality and the status of percepts. Now, I shall dismiss the first half of this problem with a reference to Montague's description of reality which accords not only with the more careful analyses of modern logical inquiry, but likewise with our instinctive and pragmatic estimates.<sup>3</sup> According to this account, the real universe consists of the space-time system of existents, together with all that is presupposed (implied) by that system (distributively and collectively, I would add). I think that the only serious objection which anybody can bring against this definition is that it may be too narrow. Other than spatio-temporal implicates may have the status of reals. But as to the accuracy of as much as is asserted, there will be little serious doubt; for, in the light of the above analysis, we can not deny the real status of any time moment, if we admit that some one time moment is real, and we can not deny that the implicates of time moments are real if we admit that the moments are real. Not only does this double necessity appear in logical analysis, but its tacit acceptance is visible in the ordinary usage of the terms "real" and "existent." Men say naturally that Socrates *was* a real person although he is *now* non-existent. The passing away of the spatio-temporal systems in which Socrates figured immediately does not attenuate his reality at all; it only alters his existential status. This popular and analytically confirmable distinction makes evident that existence is logically inferior to reality, that is, it is analogous to a species within a genus. For it is typical of specific variations and differences that they are independent of generic. For instance, an ape may vary in his peculiarly simian characteristics without varying as a vertebrate or as a mammal. Now, in applying this distinction to the interpretation of complexes, we discover readily that any complex of individuals belonging to various species of the same genus has (at least) the character of that genus (*viz.*, with respect to the complex as a mere assemblage). Thus, a group of ten men, five apes, six horses, and three cows is a vertebrate assemblage. It can not be deprived of this character by the great specific differences among its constituents. The significance of

<sup>3</sup> "The New Realism," page 255.

this fact from elementary logic does not crop out in the illustration given. You come upon it only when you construe in like manner spatio-temporal complexes. You then find that *every complex of spatio-temporal existents, non-existents, and combined existents and non-existents, is a real complex, at least with respect to its assemblage character*. For existential differences are, with respect to reality, only specific, and not generic.

Armed with this fact, the reader may return with fresh vigor to the attack upon the anti-realistic theory of the percept which the first paragraphs of this essay report. He is now in a position to accept the following proposition about the status of the percept: *In so far as the percept is a complex containing non-existents of the spatio-temporal order (past data, or memories, and future relations, or anticipations), it is a real assemblage. If it is unreal in any respect, this character can not be inferred either from the presence of non-existents in the complex or from the complex's relation to non-existents.*<sup>4</sup> Let us look briefly to the consequences of this fact. Does it not quite overturn nearly all recent restrictive interpretations of the percept? And does it not square neatly with the biologist's view of the rank of perceptive activities? I think it does both. In the first place, if the purely immediate is only one species of real, and if past and future entities are other species, then *in perceiving we reach not less of reality, but more of it than any pure intuition of the fleeting instant could ever give us*. (At the same time, we might consistently admit that perception, by virtue of its selective operations, cuts us off from some reals which perhaps may be attained through some less selective function, such as that of pure introspection.) It is not a punctiform selecting and cognizing of the exclusively punctiform features of events and conditions. On the contrary, it discloses extents, masses, and magnitudes of real times. To say the same thing in language not altogether metaphorical, the percept is not a mere point in a real curve whose equation we seek and, knowing, can deal adequately with; it is rather a segment. The only ultimate difference between things as we perceive them and things as they are revealed through microscopes and spectroscopes and electrometers and other scientific instruments of precision is this: the former are big chunks and blocks of events, while the latter are the little pieces out of which the chunks perceived are made. It is the mass or extent in time and space which we perceive; it is the constituent of the mass which we find by experi-

<sup>4</sup> The last part of this statement deserves more extensive treatment than can here be allowed. It means that, in general, no implication can be drawn concerning the generic status of an entity from that entity's relation to another within a given genus. For instance, from the *particular* relation of a cow to a horse no inference can be drawn as to the status of either animal as a vertebrate.



ment and analysis. Is it any wonder, then, that, in the color we see directly, we can not find any single ether wave which, the physicist says, is the element of light? ("Element," in the analytical sense, of course.) It is not the business of the perceiving instrument to deliver these goods. In the perfecting of the life functions, eye and ear and the agencies of recall and anticipation have arisen late; and they have arisen because whatever organs preceded them were incompetent to deal with entities much exceeding the immediate spatio-temporal present in magnitude. The sense of touch, for instance, gives us but little more than the initial pulse of the stimulus. We get through it the *establishment* of contact, but almost nothing of the *continuance* of the same contact. This fact it is to which the psychologist refers when he says that the adaptation rate of the touch sense is very high. In lower animals, this momentariness is even more marked, not alone in the touch sense, but in all others and, most conspicuously in recognition and expectation processes. I shall not adduce the hundred and odd illustrations which anybody might think of, to sharpen this point. I shall end with the remark that *extents and patterns of time-things* are the entities to which the more highly developed perceptive organs are sensitized; and the least perceptible difference and the phenomena of the "threshold" clearly demonstrate this. And to return once more to the question which gave rise to this essay—the fact that a percept is pervaded with things past and things future proves nothing at all against its full reality. The only way to convert this interpenetration into such destructive evidence is to define the real as the merely immediate. But this definition is, as we have seen, an impossible one, doing violence at once to logic and to biological testimony and to civilized man's distinction between reality and existence.

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## SOCIETIES

### THE THIRTEENTH ANNUAL MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

THE Thirteenth Annual Meeting of the Western Philosophical Association was held at Northwestern University March 21 and 22, 1913. A good proportion of the membership was present, and the sustained attendance at the different sessions, along with the lively interest manifested in the papers, showed the association to be in a healthy and vigorous condition. The majority of papers read

on Friday bore more or less directly upon the subject of Objectivity or the Criterion of Truth, and led up to a prolonged discussion in the afternoon, in which the standpoints of realism, idealism, and pragmatism were represented. At the invitation of the local members, all in attendance assembled in the evening for dinner at the University Club of Evanston, where, owing to the skillful arrangements made by the hosts, an hour of exceptional enjoyment was furnished to all. At the evening session the President's Address was given by J. E. Boodin on "The Existence of Social Minds." The smoker which followed gave the opportunity always desired for rest and conversation.

On Saturday morning a joint session was held with the Western Branch of the American Psychological Association. At this meeting five papers were presented, all dealing with aspects of the problem of the Social Consciousness. The central feature of this programme was perhaps the very able presentation and defense by Warner Fite of his views upon the subject, which elicited much comment and criticism in the general discussion which followed. At the business meeting in the afternoon the Secretary and Treasurer, H. W. Wright, reported receipts for the year of \$60.93, with expenses of \$56.34, which left, along with the balance carried over from the preceding year, the sum of \$102.86 in the treasury. A. W. Mitchell, E. L. Schaub, Milton Bennion, and G. T. Hartman were elected to membership. Officers for the coming year were elected as follows: President, B. H. Bode; Vice-President, Norman Wilde; Secretary and Treasurer, H. W. Wright; Executive Committee, A. K. Rogers, H. C. Longwell, G. H. Mead, Warner Fite. The place and date of the next meeting were left to the decision of the Executive Committee.

The following are abstracts of papers read at this meeting:

*Objectivity in Mill's Logic:* J. FORSYTH CRAWFORD.

To mediate between associationism and naturalism, Mill constructed a scheme of things and events in nature the objectivity of which is in certain respects similar to Kant's objectivity of the phenomenal world. Mill's permanent potentialities of sensation, laws of nature, and complete predictability of the universe correspond closely *in their use* to the three analogies of Kant. As used to organize the content of mental states into objective nature they are as absolute as the categories. The oscillations in Mill's logical theory have the same source as Kant's antinomies. Mill, starting with the assumption of ultimately fixed data, is compelled, in spite of his empirical intentions, to match it with the assumption of ultimately fixed forms; and he strives vainly to find a criterion of selection of relatively appropriate matter and form, such that inference shall be neither tautologous nor invalid.

*Subjectivism and the Doctrine of Coherence: E. L. SCHAUB.*

For the idealism born of German thought, the real object is identical with the object revealed within experience. Reality is significant for thought because its constituent elements are determined in their reciprocal relations by principles that are capable of being grasped by reason. Such an idealism is left untouched by criticisms directed against the doctrine of *esse est percipi*. Its fortunes are bound up with the doctrine of coherence. Its representatives, however, have frequently proved unfaithful to the doctrine. Bradley tends to divorce meaning from existence. But when the realm of the ideal is separated from that of the real, we must either fall back on the abstract, rationalistic logic of consistency, or, remembering that facts are stubborn, we must say that, to be true, ideas must be faithful to reality (the copy theory). Both of these views being clearly untenable, it seems necessary to restrict truth to the field of an absolute experience and thus to condemn our own experience as hopelessly subjective. The doctrine of coherence is violated whether, with McTaggart, we conceive thought as a movement within an ethereal realm of pure ideas (or even, with Green, regard the world as primarily an intellectual construction); or whether, to avoid an "unearthly ballet of bloodless categories," we insist that in the report of feeling the knower must become merged with the reality that is known. Facts and meanings proceed *pari passu*—every movement of thought involves at once a growing knowledge of facts and a reinterpretation of the categories in terms of which we construe experience; and, on the other hand, truth means not the abandonment, but the labor of thinking. Thus interpreted, it is not clear that the doctrine of coherence necessitates that of "pure truth," or "absolute truth," or "truth," or that of the essentially timeless character of reality.

*An Objective Criterion for Judging Conduct: E. B. CROOKS.*

Our generation has with courage thrown off well-nigh all allegiance to doctrines of authority, but we live in a world that demands action, and therefore direction, *i. e.*, a criterion of conduct. Gabriel Tarde's book, "Penal Philosophy," attempts to supply concrete bases for fixing responsibility in actual instances of conduct. Tarde was for twenty-five years judge of a criminal court, and is interested to find practically workable tests for responsibility. He proposes two such tests, social similarity and individual identity. Social similarity depends not on physical similarity, as color, but on agreement in natural inclinations, as sexual desires. But individual identity is a much more fundamental test of responsibility—in fact, the only one that needs to be used in the highly civilized level. It amounts to asking if the accused is normal, can he identify his present self-



consciousness with his past states of consciousness. Degrees of self-identity are recognized, so we are really asking how much of a person the one to be judged may be.

These criteria of Tarde are not fully satisfactory, because his application of them proves too individualistic. Even individual identity, if it is to be an objective and not a subjective test, must be socially applied, for the individual can only be judged in relation to the social surrounding to which he reacts. The really objective question to ask about responsibility is what does the great person think—society, the only person who is thoroughly self-conscious?

But the process of fixing responsibility is only half done when the tests of social similarity and individual identity are applied to the individual, for they must be applied with equal rigor to the inclusive social person, if justice is to be done to any case of conduct. With each culprit society must be brought into court to be judged.

But in applying these criteria to the social person we are led from the small group social person to more and more inclusive social persons, and thus get a hint that back of all may be an all-inclusive and fully self-conscious person—the Absolute.

*Bergson's Intellect and Matter:*<sup>1</sup> C. E. CORY.

*The Bent Stick:* W. L. RAUB.

The epistemological problem involving the question of the deception of the senses may be illustrated by the stick that apparently bends in the water. To the physicist, who explains this by the refraction of light, it is a straight stick appearing bent. This view involves the distinction between appearance and reality, between percept and object. Epistemology, however, must recognize that the senses do not deceive. The "contradiction" is between the percepts and what we believe to be true. The bent stick is a perceptual fact, while the straight stick that appears to bend is conceptual, a construction of thought. The latter can not be used as the basis of a theory of objectivity because it is the result of such a theory.

*A Realistic Criterion of Truth:* EVANDER BRADLEY MCGILVARY.

A criterion of truth is something that gives to an idea an assurance or conviction it has hitherto lacked. In the last resort it is absurd to require of a criterion its credentials. It either produces conviction, and then it needs no endorsement, or it does not, and then endorsement is useless. The question is simply, What is the criterion of truth? It is not, What ought to be the criterion of truth? As a matter of fact, in science and in common life the ordi-

<sup>1</sup> Abstract not furnished.

nary test of truth is found in the experience of something that points indubitably to the existence of something not experienced. Ordinary evidence is circumstantial evidence. If circumstantial evidence be accepted as good evidence, then realism is so far forth a tenable theory. If not, then realism is unwarranted.

*Voluntarism and the Criterion of Truth:* H. W. WRIGHT.

If definite meaning is to be imparted to practical success as a criterion of truth, it must be illuminated by the discovery of the end whose attainment, either as a whole or in part, makes conduct successful. The end required to satisfy volition can be discovered only by finding out what are the demands of volition itself. Volition shows itself upon study to be an agency of organization whose aim is to increase the unity and coherence of personal life under the actual conditions of human existence. This supreme end of self-organization it seeks through three coordinate activities: that of thought, or the power of ideating objects regarded as possible of realization; of action, or the power of adapting actual conditions to the ends of intelligence; of feeling, or the power of appreciating the effect upon the self of the pursuit and attainment of objects. Each of these activities has its special end which, in the degree of its attainment, measures the progress of self-organization and hence serves as a criterion of truth in its own field. Thus we derive three criteria of truth: intellectual consistency, technical efficiency, and emotional harmony. Each criterion has its own field to which it is specially applicable; frequently it is possible to use either one or the other at pleasure; occasionally the employment of all three is desirable.

*Objectivity and Truth and Error:* A. W. MOORE.

The neo-realistic account of truth and error in Professor Montague's interesting paper takes the position that "true and false" are attributes of the *objects*, not of the *act* of "belief or judgment." The objections urged against "true and false" as attributes of a contentless, "subjective," "psychological" action are convincing. But does not their transference to an actionless and merely "existent" or "subsistent" object make the same assumption and encounter the same difficulties as the other view—the difficulties, namely, that grow out of the assumption that "belief or judgment" can be dissected into a contentless act on the one side and an "existent" or "subsistent" object on the other?

Some of these difficulties appear at once in the relation between the definitions of belief and of the distinction between truth and error. "Truth and error are respectively belief in the real and the unreal." But belief "is the attitude we take toward any proposition that *appears* to be true and real and carries with it a tendency to act on that proposition."

But (1) if the object of belief must always "appear *true* and *real*" (italics mine), how is belief in the unreal and untrue possible? (2) If, on the other hand, the phrase, What "*appears* true and real means that, *from the believer's standpoint*, the object only *appears* (*i. e.*, may or may not be) true and real, then the object of every "belief or judgment" must always be an "appearance" and never the "real and true."

The only escape from this dilemma is *viâ* the assumption, which the account seems to make, that these definitions are made—not from the standpoint of the believer or judger, but from the standpoint of what Professor Bode calls an "innocent bystander."

*The Existence of Social Minds:*<sup>2</sup> J. E. BOODIN.

*The Basis of Internationalism:* G. L. TALBERT.

From a genetic point of view the sentiment of internationalism is made of the same stuff as that first developed in primary groups. The transition from the family and the play-group consciousness to nationalism and internationalism is due to crises springing from specific antecedents and stimulating a direct response. In opposition to a mystical view of brotherhood and the rationalistic concept of humanity as such, generated because of the inherent universalizing nature of consciousness, the position is that whatever international consciousness exists is a consciousness arising out of problems felt to be vital. Some of the problems which are actually operating are: the necessity of mutual aid among immigrants in large cities; the standardizing brought by inventions, the machine industry, and international trade; the sameness of economic forces affecting working men in all industrially advanced nations, giving rise to international associations whose ideal is justice; the recent interest in the welfare of the child without reference to national hostilities. Recent studies of the genesis of language and art from the angle of social psychology corroborate the view that international consciousness is a genuine growth, not something to be deduced from an introspective analysis of the unity of consciousness as an achieved reality.

*The Social Implications of Consciousness:*<sup>3</sup> WARNER FITE.

*The Social Self:*<sup>4</sup> G. H. MEAD.

The question which this article undertakes to answer is the following: What is involved in the self being an object? The subject is only a presupposition, since the self always appears as an object in experience. We are, however, aware of addressing ourselves. Under these conditions, there appears both a subject and an object. This subject, however, is itself the object of an observation. It is

<sup>2</sup> Abstract not furnished.

<sup>3</sup> To be published in full in a forthcoming number of this JOURNAL.

<sup>4</sup> To be published in full in a forthcoming number of this JOURNAL.



the same self that we recall as responding or as acting with reference to others, not the self that observes. The self which one addresses is also the self which is acted upon by others. The memory, therefore, if one has self both as subject and object, does not bring a subject into the field, but only selves which must be present in the objective case. The possibility of this is found in the fact that our social stimulation of others affects ourselves so that we tend to respond thereto in the same fashion in which another responds.

There is thus a "me" in the back of the head that is continually affected by our conduct toward other persons. The self of self-consciousness is a combination of this self and the self that acts with reference to other persons. Our conscious awareness of our own conduct is due to this relation between the conscious and self-conscious selves.

Application of this doctrine is made to the psychology of ethics. It is pointed out that the ethical problem involves a reconstruction in which a new social object arises before the new self appears.

*Reality and the New Realism:* H. M. KALLEN.

Neo-realism offers itself as a true and unprejudiced account of reality. It insists, in this offer, on the validity of analysis and the objectivity of secondary qualities, etc. But with respect to the first point it begs the question: for (in Mr. Spaulding's case) it decides on the results of its analysis before it undertakes to make it. In point of fact it offers a synthesis, and not an analysis. With respect to the second point, it exhibits (in Mr. Holt's case) the causes or ground of secondary qualities, but not their objectivity. It attributes the objectivity of this ground to the qualities themselves. This is a *non-sequitur* and a confusion.

*Euler's Circles and Inversion:* ARTHUR MITCHELL.

The Euler figures represent the four specific varieties of categorical relationship, which are completely determinate, as judgments (except *E*) are not. Hence, reasoning from a single diagram to the implications of a judgment (except *E*) is invalid, while such reasoning from integral sets of diagrams, by abstraction of common features, is valid.

Quantity and quality are aspects of meaning essentially implying each other and expressing each other and existentially equivalent to each other, all in the same sense as that of the relation between the poles of a current. The quantitative co-implication of negatives, represented by "annexing" space circumjacent to Euler circles, is the quantitative aspect of discrimination, and therefore logically valid and necessary.

Co-implication of *S* and non-*S*, resting on discrimination, is inde-

pendent of any distinction between logical subject and predicate. The essential matter of discourse, in any proposition, is neither term, singly, but their relationship, integrally, of which subject and predicate are correlative (and therefore logically coordinate) terms.

The existence of the negative is of the same warrant as that of its correlative, the posited term. The universe of discourse includes certain negative, as well as affirmative, implicates.

The inverse of I. is valid, together with its converse, the contrapositive of I. Eductiveness is not a criterion of validity. Inversion is not essentially depressive.

*Epistemology from the Angle of Physiological Psychology:*<sup>5</sup> GREGORY D. WALCOTT.

Knowledge and reality are not identical. The former, however, may be regarded as a part or phase of the latter, since consciousness, which is involved in the knowing process, is real, in the sense of actual, and the starting-point for all theories, whether idealistic, realistic, or what you will.

From the solipsistic quagmire thus suggested, one may extricate oneself by assuming, in a scientific way, the reality of the seeming internality and externality of one's stream of consciousness, and then, by explaining hypothetically the relation of another's stream of consciousness to objects in his field of vision, one has the basis for the explanation of one's own knowing process, even though in opposition to one's introspection. The sun seems to move from east to west, but we reject this seeming in favor of scientific theory. We need to do the same with many other phases of our stream of consciousness.

A dual series, then, of subjective symbols, on the one hand, standing for objects, on the other, would seem to meet the exigencies of our epistemological problem, in view of the comparative meagerness of our race experiences to date and the presumed fluidity of the universe as a whole.

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## REVIEWS AND ABSTRACTS OF LITERATURE

A *Psychological Study of Religion: Its Origin, Function, and Future*. JAMES H. LEUBA. New York: The Macmillan Company. 1912. Pp. xiv + 371.

When William James's "Varieties of Religious Experience" first appeared and awakened an enthusiastic chorus of welcome, Professor

<sup>5</sup> To be published in full in a forthcoming number of this JOURNAL.

Leuba reviewed it, and in definite and convincing manner pointed out the flimsy nature of its positive contribution. It is interesting now to see how he rests his own positive suggestions for a valid religion of the future upon a Bergsonian basis—the push of life, impersonal, non-purposive, but capitalized, crowding humanity along in comprehensive and centripetal movement. This creative force is, however, not a mere civilized counterpart to primitive “dynamism.” For the psychological evolution of religion does not follow in direct line from the impersonal forces of the savage world. There are new creations midway along the process, bringing gods and theologies; and old concepts do not coalesce.

The drift of Professor Leuba's conclusions is as follows: “The belief in non-personal powers is neither a derivative of animism nor a first step leading up to it, but the two beliefs have had independent origins. . . . Animism appeared second in order of time” (p. 77). This leads to the position that magic and religion are distinct both in origins and content, although similar in practises and aims—contrary to Frazer's claim that they are essentially opposed (p. 176). In developing this point of view, the author presents an analysis of both “magic” and “religion” which is highly interesting. After a constructive criticism of current conceptions of religion, it is defined, though not formally, as “that part of human experience in which man feels himself in relation with powers of psychic nature, usually personal powers, and makes use of them.” But coercitative use is magic and only the anthropopathic need be considered as religious. To maintaining this distinction from the start, he cuts off the evolution of gods from that protoplasmic base, *mana*, which has so fundamentally reset the problem for recent anthropologists. The evidence adduced for this divorce in the actual history of evolution of divinities is not convincing to the reviewer. We agree that the gods arise in various ways, and Professor Leuba's classification of origins (p. 86) is helpful. But this is merely a distinction of varieties such as afterwards characterize the resultant deities. But they are all *deities*! What made them so? “The need of accounting for observed phenomena” might as well make them mere ghosts or dreams or storms, or whatever they really were. “The needs of the heart” or of “conscience” are needs, why? If we revert to the central theme of the book, it is because of life itself; “the vital instinct is the source of religion” (p. 48). But this is not a close inductive study of the actual process. It is a psychological deduction from analogies. Now one can actually trace *mana* becoming deities. Even the fragmentary literature of ancient Rome reveals the process to the full, as Fowler has so clearly shown. Space is lacking for a proper analysis of this point. There can be no two opinions on the matter; it is not a matter for opinion.

The analysis of magic is original, although the emphasis upon “will magic” is not entirely novel. One of the most suggestive studies of it was an article by W. R. Halliday.<sup>1</sup> Professor Leuba's treatment, however, is his own, and one of the most valuable parts of the book. It is a

<sup>1</sup>“The Force of Initiative in Magical Conflict,” *Folk Lore*, 1910.



side of magical procedure which has not received sufficient attention, and it is now frankly up to the psychologists to deal with it. But if, as follows from our statements above, we are left with no real separation genetically between the main basis of magic and that of religion, distinctions in methods of action, upon which the Frazerian analysis really rested, are not fundamental, and the scheme of this part of the book is involved with that of the earlier part.

What lies back of this? Professor Leuba's history of the changes which have taken place in the religious emotions shows a pragmatic touch in that he is in haste to be done with fear in order that the religious attitudes of the last five or ten years may shine out, and from them a hopeful future be assured. So even awe is antiquated, and optimistic realization of life's possibilities (an intuition of the *élan*) takes its place. But religion as such must be studied in the light of its "superstitions" rather than its rational aspects. For the "superstitions" contain the stuff of its long past and the rationalism is characteristic only of it when it is losing its age-long content of emotion.

The one common denominator of religion is mystery—as Professor Leuba feels himself when he proposes forms and symbols (p. 335) for the Bergsonian-Comtist religion of the future. They have hymns in the positivist "churches." Now all this accompaniment of the "worship" in the religion of humanity calls up the same kind of emotional reaction as if there were a personal deity in their doctrines. The conceptual element in worship matters relatively little, anyhow. Rites and symbols are just what give the psychological suggestion which lifts one out of economics into the religious setting of mystery, and awe and reverence play in a softer key the savage old chords of fear.

It is difficult to state these elusive matters even when space permits. When criticism has to make its own point over against that of the author little room is left for any appreciative comments. But this is a notable book in its field; one of the best. It is lucid in style and simple in arrangement, and presents sanely an original and highly suggestive analysis of the great problem. An appendix contains all the definitions of religion which have had any vogue or influence, a valuable collection for comparative study.

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THE following review by Professor Hocking was published in the *Bryn Mawr Alumnae Quarterly* for January, 1913. It has appeared to the editors so interesting and important as to merit reprinting.

For seventeen years the clear, concrete, and incisive articles of Professor Leuba on various aspects of the psychology of religion have been attracting attention. He was the first to make a careful psychological study of religious conversion, anticipating, and no doubt stimulating, that remarkable succession of works by Starbuck, Coe, Davenport, William James, and others which, with his own, have given America the foremost place in this field. In the present volume Leuba states his most

general conclusions regarding the nature of religion and its origins, and defends the faith, which has inspired all his work, that psychology, and psychology alone, can give us an understanding of what religious experience means. But the book has an interest more than theoretical, for in it the author passes judgment upon the most conspicuous of contemporary religious movements, and even ventures a forecast as to the future of religion. Throughout the whole work there is an earnest prophetic ring which, if it sometimes takes the direction of harsh moral judgment upon opposing points of view, is an evidence of the priceless quality of conviction and of a definite positive aim. Professor Leuba will not be misunderstood; he will not take refuge in ambiguities; he offers his reader, whether for agreement or disagreement, the satisfaction of a position plainly stated and strongly supported. The result is a book of distinct value for all students of religion.

Part I. gives a preliminary survey of the nature of religion, in which religion is shown to be a concern of the whole man, not of his intellect alone, nor of his feelings, nor of his will. It may be best understood as a specific sort of *behavior*—and of rational behavior, because it has definite practical aims having verifiable human worth. Through religion men have endeavored, and still endeavor, to control the forces of nature, to influence the body, to cure disease. In these matters, to be sure, the importance of religion declines with the advance of science; but in compensation there are other results of religion—by-products, not directly sought by the worshiper, but of great significance. For the practise of religion quickens the intelligence and the feelings, generates confidence and optimism, strengthens the moral ideals, and so acts as a unifying and socializing agency. Further, it gives rise to an authority and prestige of its own, and so gratifies desires for power and recognition. Religion is thus “a factor of the highest biological importance.” It exists, not because the ideas which it teaches are true, but because it is more or less successful in reaching these useful results, in satisfying these universal human needs.

But we can not define religion by its consequences alone. Some, perhaps all, of these goods could be otherwise obtained. The peculiarity of religion is the *method* by which it seeks its ends. Its procedure is not mechanical, measuring the cause to the effect; nor is it “coercitive,” as in magic, treating the unseen forces as things to be compelled by secret necessities. Religion deals with its (assumed) spiritual environment as with fellow men, making appeal to intelligence and will: religion is a mode of “anthropopathic” behavior. “Religion is that part of human experience in which man feels himself in relation with powers of psychic nature, usually personal powers, and makes use of them” (p. 52). In religion, we may say, man seeks by the methods of human intercourse superhuman aid in the struggle for existence.

Part II. contains a valuable series of chapters on the origins of religion and its relations to magic. The criticisms of Frazer's views of magic, and of his theory that religion emerges from the decline of a discredited magic, are especially keen and substantial. Leuba regards as

fallacious the usual attempt to find a single origin for our various ideas of superhuman beings. The idea of impersonal powers, such as magic uses, is independent of, and probably earlier than, the ideas of unseen beings personal in character such as are necessary to religion. These latter conceptions again, those of spirits and gods, have several distinct sources. Some of them are due to our inquisitive, explanatory faculties at work upon such phenomena as hallucinations and dreams, or speculating on the origin of the world itself and of human existence; for inquiries into the mystery of creation occur early in the child, and presumably also in the race. Others of these ideas are due to the needs of the heart and of conscience, assigning to unseen beings such qualities as fit them to give comfort, or to support moral endeavor. It is these affective and moral needs that keep alive to-day the belief in gods. "It is truly a remarkable habit—that of imagining in other beings coveted powers and virtues, and of turning these powers by supplications and offerings to one's own benefit, or of enriching oneself with these virtues by means of sympathetic communion" (p. 112). Yet "this method characterizes not only the relations of men with gods, but also of men with men. We see in others the perfections which we lack." Thus the propensity to deify fellow beings which we recognize and understand in human love may illustrate the motives which perennially give life to the god-ideas of religion.

In so far as moral needs are a source of religious ideas, it is clear that moral consciousness must exist first, and religion afterward, in the order of development. The proposition that morality is independent of religion in its origin is defended at the beginning of Part III. Morality has its origin in social relations; it is a spontaneous human product; as it develops and becomes reflective it finds religion a valuable auxiliary, and so takes part, as we have seen, in the development of religion itself. The gods, we may say, as far as they are concerned in morals, "are either unconscious or conscious devices for the speedier attainment of ideals arising in the social life." "The God of Christianity continues to be an object of worship, not because His existence is rationally established, but because He affords ethical support and effective comfort" (p. 201).

We have now before us the main theme of the book. The foundations of religious belief are not intellectual; current beliefs exist and flourish even in spite of the intellect, "theism having become logically impossible" (a standpoint vital to the author's argument, but undefended—taken for granted throughout the work). Religion itself is at present inclined to reject the support and so evade the criticism of metaphysics and of science. To show this, Leuba cites an extremely interesting array of documents, in which various representative believers attempt to give grounds for the faith that is in them. Distrust of the former intellectual arguments for faith is everywhere evident. Faith, then, must be established on other grounds than those of reason. What are these other grounds? They are those human needs we were speaking of; the needs of the feelings and of the moral aspirations. With the beliefs of religion, and the behavior which these beliefs make appropriate, prayer and worship in



particular, men actually find that those needs are satisfied. Faith thus takes on the semblance of an *induction from experience*—inner experience, of course. Men no longer believe because their philosophy tells them that there is a God; they believe because when they approach God as if he existed they experience something which they can only interpret as a *response*; a consciousness of relief, assurance, peace, comfort, elevation, joy, conversion. Faith has nothing to do with metaphysics; it is a determination to refer these experiences to a superhuman or divine cause. And now Leuba contends that this determination is perverse, because these experiences can be explained, or nearly all of them, by psychology. If, therefore, theology gives up its intellectual basis in metaphysics, it ought to become a branch of psychology, and try to get these experiences by scientific methods.

Auto-suggestion, for example, will explain much and can do much. If we allow this and other resources of modern psychology their full scope, shall we not find that we have as little need of the over-beliefs of Christian faith as Laplace had of the hypothesis of a God to explain the mechanics of the heavens? Let psychology explain all it can, at any rate. If there is any inexplicable residuum, let psychology find and measure it by procedures known to science, the "method of residues," in fact—just as the astronomer measures a perturbation which indicates an unknown external influence on the path of his planet (pp. 242, 270).

This is a proposal to pause at. Is there perhaps a certain irony in this suggestion that the work of God in the mind might be discovered by the method of residues? Does the author seriously mean that we should refer to God those mental states which psychology at any time fails to account for? Is God supposed then to do only what natural law leaves undone? Are we not claiming too little for our science of psychology? I would rather say that when we regard our own mind as a succession of "states" having "causes," then everything in it without exception must belong to psychology: there is no conceivable residue which the science could hand over to anything except to its own unfinished investigations. Give all to psychology, and then let us be clear enough to see that the question whether a god is at work *in* those natural laws, or whether these laws in some mysterious fashion are working themselves, has not been so much as touched on.

Nor can this question very well be answered by psychology. For while psychology deals with the immediate causes of mental fragments called "states of mind," such causes as arise from the connection of mind and body, it can say nothing of total and ultimate causes. But the mind itself leaps at once to the end of any such chain of causes and finds itself in the *presence* of its terminus. While the psychologist is tracing a sensation to the work of a ray in the retina, the mind is seeing a star. The mind when active is never concerned with itself as a "state" having a "cause"; it is absorbed in its *meanings*, and these meanings pass beyond the mind into the world of *objects*, eluding the grasp of psychology. Our physical sensations belong to psychology: but to the active mind these sensations *mean* a world of nature, and a science not of psy-

chology, but of physics. Our moral feelings belong to psychology; but to the active mind those feelings *mean* a present social environment and a science not of psychology, but of ethics. So of these religious experiences; whatever their causes, their meaning breaks out of the circle of consciousness and presents the mind with certain objective facts of its spiritual environment. What are these facts? The religious ideas of God undertake to answer. Are these ideas subject to illusion? No doubt, just as our senses in dealing with nature are subject to illusion; and just as these errors of sense-judgment give rise to the science of physics for their correction, so the errors of faith give rise to the science of metaphysics (that is to say, the science of realities)—not to the science of psychology.

We must then agree with our author when he says that "every trans-subjective reference falls under the criticism of the intellect" (p. 276); but we can not agree that this criticism is primarily a matter of psychology. We must agree with him that if we eliminate metaphysics, religious experience can give no sufficient ground for a faith in God; but we can not eliminate metaphysics.

In truth, our author, in other parts of his book, is fully aware of this fact. "The objective existence" of its objects of belief, he has said at the outset "is an assumption necessary to religion" (p. 18); though he contends that the assumption need not be true. It is enough, however, that the religious consciousness must *believe* it true; must have a metaphysics of its own (a metaphysics being nothing more than a working view regarding what is real and what is not real). Hence, when Professor Leuba undertakes, in Part IV., to outline a basis for future religion, he becomes himself a metaphysician. He indicates a world-view which he regards as psychologically sufficient while at the same time philosophically tenable. He shows that naturalism is insufficient; and that the religion of humanity in its older forms is insufficient. We must have at least so much of a philosophical background as will preserve for us "the idea of righteousness, the idea that justice will gain the ascendent, and that there is a sublime purpose in things" (p. 328, quoted from Adler), we need, in short, a measure of idealism. For metaphysical reasons, he thinks that "the religion of the future will have to rest content with the idea of a non-purposive Creative Force" (p. 334); yet this religion should be "centered about Humanity, conceived as the manifestation of a Force tending to the creation of an ideal society" (p. 336).

Here we have the foundations at least of a working creed, in harmony with the *Weltanschauung* of our author, and, as he believes, generally acceptable to the intellect of the future. Further details of this creed might be gathered from the vigorous and highly interesting critique of contemporary religious movements. But we must forgo this for our own part, recommending it to the reader. Neither shall we here record any criticism of the creed itself, since its philosophic defense has not come within the scope of our author's purpose. I remark only that between such a "non-purposive" force as exhibits the ideal tendencies attributed to it, and the purposive Being dimly imagined in our common

religious belief, the gulf is not so great as Leuba's hearty rejection of theism had at first led me to anticipate; though it is not quite clear to me what, with such a belief, would become of the "anthropopathic behavior" of men toward their creator, and therewith of religion, as our author has defined it.

A more positive and consistent recognition throughout the book of this sturdy metaphysical background would much enhance, I believe, not alone its clarity and unity, but also the effectiveness of its many fine passages. How much it contributes, for example, to such an admirable bit of psychology as the following, to know that behind the psychology there is a conviction of reality: "The value of awe to religion is not only its disinterestedness—a purely negative virtue; it has a direct ennobling effect. To be impressed by the great, the powerful, the mysterious, and still be unafraid, is to evince one's partial kinship with these forces. Fear reveals antagonism, enmity, isolation; awe, involving as it does the recognition of greatness without actual fear, gives the first sense of a not unfriendly relation with the cosmos. . . . The sympathetic vibrations of awe are the first organic sign of a friendship with the cosmic forces, the first step toward that ultimate union with the Great Whole, achieved in certain forms of practical mysticism" (p. 147).

Kinship with the forces of the world implies much: friendship and union with them are the essential achievements of religion. The religion of the future must, like that of the past, provide (and we hope as successfully) for the literal accomplishment of these great ends. Without theism "friendship" here is meaningless.

A review of this sort must confess at the end its failure to suggest some of the chief merits of the book, its wealth of detail, its wide command of sources, its *Sachlichkeit*, its power of discrimination (which prevents at times the just estimate of resemblances), and its insistence on the fundamental truth that religion must be a matter of experience and will—not of metaphysics *alone*.

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## JOURNALS AND NEW BOOKS

MIND. October, 1912. *Shadworth Hallway Hodgson* (pp. 473-485): H. WILDON CARR.—Contains, relative to the death of Shadworth Hodgson, the founder and first President of the Aristotelian Society, an outline of the general features of his philosophy. The main task of philosophy, the pure science of metaphysics, consists in a thorough analysis of experience, the sole evidence of existence, an account of which analysis is here given. *The Reign of Science in the History of a Race* (pp. 486-507): ALFRED H. LLOYD.—A chapter of what is eventually to constitute a history provisionally entitled *The History of the Humani*. The Reign of Science, the third in the series of law, art, science, philosophy, and religion, is openly rationalistic. The central fact is the alliance of science and



commerce, of candor with utility; the scientific spirit representing the intellectual, the commercial the practical life. *Perception and Intersubjective Intercourse* (pp. 508-521): WILLIAM W. CARLILE.—"We find the world of individual experience conceived of as transformed through the exigencies of intercourse into the world of common experience which we call the world of reality." *Implication and the Algebra of Logic* (pp. 522-531): C. I. LEWIS. - From the standpoint of an analysis of the meaning of implication, objection is made against the present form of the calculus of propositions. The meaning of "implies" in algebraic logic, its characteristics, its limitations, its divergence from the "implies" of ordinary reasoning, are considered. Alternative methods are suggested. *Discussions: The "Working" of "Truths"* (pp. 532-535): F. C. S. SCHILLER. - *Critical Notes: A. Aliotta, La Reazione Idealistica Contro la Scienza: A. E. TAYLOR. J. C. Meredith, Kant's Critique of Aesthetic Judgment: J. M. O'SULLIVAN. E. J. Urwick, A Philosophy of Social Progress: J. S. MACKENZIE. B. Russell, The Problems of Philosophy: B. BOSANQUET. A. H. Stirling, James Hutchinson Stirling: His Life and Work: J. B. B. William James, Essays in Radical Empiricism: B. RUSSELL. New Books. Philosophical Periodicals. Notes.*

REVUE PHILOSOPHIQUE. January, 1913. *La morale en fonction de la réalité* (pp. 1-28): J. DE GAULTIER. - Reality has usually been conceived as a function of a moral idea. The author tries to state the ethical problem avoiding the implied impropriety of conceiving the whole as a function of a part. *Spiritisme et cryptopsychie* (pp. 29-50): E. BOIRAC. - A discussion of the relative probability of the cryptopsychic and spirit hypotheses in explaining the phenomena made indubitable by Wallace, Crookes, Richet, Flournoy, and others. *Signes et symboles* (pp. 51-70): L. ARRÉAT. - The universality of symbolic language signifies a condition of expression. Thus art is also a "knowledge." While "abstract minds extend truth, concrete (artistic) minds preserve it." *Revue générale. Le deuxième congrès international d'éducation morale: BENRUBI. Analyses et comptes rendus. A. Joussain, Esquisse d'une philosophie de la nature: FR. PAULHAN. C. Baires, Teoria del amor: J. PÉRÈS. G. Palante, Les antinomies entre l'individu et la société: A. BAUER. Urtin, Le fondement de la responsabilité pénale: G. RICHARD. Revue des périodiques.*

Bechterew, W. *La Psychologie Objective*. Paris: Librairie Félix Alcan. 1913. Pp. iii + 478. 7.50 F.

Dumesnil, Georges. *La Sophistique Contemporaine; Petit Examen de la philosophie demon temps, Metaphysique, Science, Morale, Religion*. Paris: Beauchesne. 1912. Pp. 116.

Field, G. C. *Socrates and Plato: A Criticism of A. E. Taylor's Varia Socratica*. Oxford: Parker and Company. London: Simpkin, Marshall. 1913. Pp. 40.

Frank, Henry. *Modern Light on Immortality*. Second Edition. Boston: Sherman, French, and Company. 1909. Pp. 467. \$1.85.

- Guerard, Albert. *French Prophets of Yesterday*. New York: D. Appleton and Company. 1913. Pp. 288.
- Häntsch, K. *Johann Friedrich Herbart's Lehrbuch zur Einleitung in die Philosophie*. Leipzig: Felix Meiner. 1912. Pp. lxxviii + 388.
- Hunter, Walter S. *The Delayed Reaction in Animals and Children*. Behavior Monographs, Vol. II., No. 1. Henry Holt and Company. 1913. Pp. 86.
- Külpe, Oswald. *Die Realisierung, Ein Beitrag zur Grundlegung der Realwissenschaften*. Leipzig: S. Hirzel. 1912. Pp. x + 257.
- Le Roy, Edouard. *The New Philosophy of Henri Bergson*. Translated by Vincent Benson. New York: Henry Holt and Company. London: Williams and Norgate. 1913. Pp. x + 235.
- Macmillan, R. A. C. *The Crowning Phase of the Critical Philosophy: A Study in Kant's Critique of Judgment*. London: Macmillan Company. 1912. Pp. xxv + 347.

## NOTES AND NEWS

### SUBJECT OF DISCUSSION FOR THE JOINT MEETING OF THE AMERICAN PHILOSOPHICAL AND PSYCHOLOGICAL ASSOCIATIONS

THE Subject of "The Standpoint and Method of Psychology" has been selected as the topic for the joint discussion of the American Psychological Association and the American Philosophical Association at its next meeting at New Haven. Professors Edward G. Spaulding and Howard C. Warren, of Princeton University, suggest the following formulation of the problem, which, it is hoped, will serve as a starting point for further formulations and discussions:

*Data of Psychology*.—Should psychology study unit-beings (selves, mind, consciousness), or inner states (*e. g.*, sensations, feelings), or inner processes (*e. g.*, sensibility, affectivity, association), or certain relations between unit-beings and their environment (*e. g.*, reflexes, instincts), or several of these.

*Method of Research*.—Should the psychologist obtain his data mainly by self-study (introspection by himself and others), or by studying the motor reactions of organisms? If both methods be admitted, what is their relative importance?

*Philosophy of Psychology*.—Does a systematic psychology depend upon a specific world-view, or can it be developed, as are physics and biology, without a definite philosophical basis? In the latter case, do the results of empirical psychology compel us to adopt some specific philosophy?

*Note*.—The question of the nature of consciousness, sensation, introspection, etc., should be discussed only in its relation to the standpoint that is taken concerning the above positions.

THE Reverend August Karl Reischauer, professor of philosophy in Meiji Gakuin, Tokyo, Japan, has recently given at New York University a series of lectures on "Buddhism's Challenge to Christianity in Japan." The subjects of the individual lectures were as follows: "Buddhist Origins"; "The Development of Primitive Buddhism into Mahayana Buddhism"; "Historical Development of Japanese Buddhism"; "The Buddhist Canon"; "The Japanese Sects and Their Chief Tenets"; "The Strength of Christianity in Japan."

AT Leland Stanford University, Professor Henry W. Stuart has been granted Sabbatical leave for the year 1913-14, Professor Sabine has been advanced to the rank of associate professor, and Professor Warner Fite, of Indiana University, will conduct courses in the department during the first semester.

THE Librairie Marcel Riviere announces the publication of a new magazine, *Revue des Sciences Psychologiques*, under the editorial guidance of MM. J. Tastevin and P.-L. Couchaud. The review will appear every three months, each number being composed of 90 pages.

A CONGRESS for esthetics and general philosophy of art (*Kunstwissenschaft*) is planned for October 7-9, 1913, in Berlin. Those who contemplate active participation are requested to write immediately to Professor Dessoir, Berlin W., Speyererstrasse, 9.

JAPANESE graduates of Harvard University have subscribed a fund of \$20,000 as the foundation for a lectureship in the department of philosophy to provide for the teaching of Japanese and other Oriental systems of philosophy.

THE International Association of Medical Psychology and Psychotherapy will hold its annual meeting at Vienna on September 18 and 19, immediately before the opening of the Congress of German Men of Science and Physicians.

DR. FREDERICK LYMAN WELLS, assistant in pathological psychology at the McLean Hospital, has been conducting a course of lectures and discussions on "Pathological Psychology" at Harvard University.

SIR OLIVER LODGE has been elected president of the British Association, in succession to the late Sir William White, for the meeting to be held in Birmingham next September.

PROFESSOR C. E. FERREE, of Bryn Mawr College, read a paper before the American Philosophical Society of Philadelphia on April 4, entitled, "The Problem of Lighting in Its Relation to the Eye."

THE French Academy of Moral and Political Science has elected M. Pierre Janet, professor of experimental psychology at the Collège de France, to the chair left vacant by the death of M. Fouillée.

PROFESSOR HARRY A. OVERSTREET, of the College of the City of New York, will give two courses in philosophy at the Summer Session of Columbia University.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### THE CASE METHOD IN THE STUDY AND TEACHING OF ETHICS<sup>1</sup>

THE study of ethics often seems to be looked upon as an elegant accomplishment rather than as a necessary preparation for life. Last year, in a large New England college, there were presented to the faculty programmes of study leading to many different professions. In but one of these, the ministry of the church, was ethics looked upon as essential. The study of ethics does not apparently lead any one to pursue a more moral life; and there is a wide difference between teaching a man ethics and teaching him to be ethical. It may be doubted whether anything but the inspiration of a great leadership ever influences men to any kind of righteousness.

I hold that every teaching of ethics should be adapted to make men ethical. Any other advertisement of it is itself most unethical.

There are as many moral standards as there are men united in a common purpose. Any one of these is admirable in some respects. Have they any points in common? And is there such a thing as an objective ethics which could command the adherence of all intelligent and instructed men in the same way that the teachings of the physical sciences to-day are accepted by the same class?

An experience of concrete ethical situations which I may claim to be both wide and deep has given me a respect for the fundamental agreements of different systems. Christian, Buddhist, Mohammedan, common sense, utilitarian, intuitionist ethics, yes, even the no-ethics of Nietzsche, give, if I may venture the paradox, a pragmatic sanction to the admonitions of our spiritual and secular pastors and masters, which is striking; and I have come to think that the principles of morality must be of a certain robustness to withstand the interpretations put upon them by men of such varied temper, training, and tradition.

I believe that all who study the subject agree with me that there are these fundamental likenesses. The natural inference would be that there is *an ethics* which could be generalized from them, giving us a rule of conduct binding, not from without, but in the very na-

<sup>1</sup> Read at the meeting of the American Philosophical Association, December, 1912.

ture of conduct itself. To find such a rule one must pursue the path of the physical sciences without more ado, leaving all metaphysical questions regarding the ground of moral obligation aside, to be settled, if at all, in their proper place.

*It must not be assumed at the start that we know what right conduct is. There must be an unprejudiced search with no arrière pensée.*

Meditation upon this has led me to consider the possibility and advisability of employing in the study of ethics the case method or system, now in use in the Harvard and other important law schools. I propose, therefore, to put and try to answer four questions, after which I shall endeavor to present the results of a two years' trial of the method at Dartmouth College, the only place, so far as I know, where it has been employed in ethics. If I am wrong in this, I shall be glad to be corrected, and I would rejoice to know that others had tried it, that I might profit by their experience.<sup>2</sup>

I. What is the case method in law?

II. Why adopt it for ethics?

III. What is its value for the study of ethics?

IV. What is its value for the teaching of ethics?

## I

The case method, as applied to the teaching of law, I find attacked in an article by Dr. J. P. Bishop.<sup>3</sup> He says of the authorities of the Harvard Law School, "They have swept the whole line of textbooks away;" but he acknowledges that "the use of decided cases in elementary instruction has always been common and [he believes] universal."

President Eliot, upon being introduced to explain the formal adoption of the method, said:<sup>4</sup> "He [Professor Langdell] told me that law was a science: I was quite prepared to believe it. He told me that the way to study a science was to go to the original sources. I knew that was true, for I had been brought up in the science of chemistry myself; and one of the first rules of a conscientious student of science is never to take a fact or a principle out of second-hand treatises, but to go to the original memoir of the discoverer of that fact or principle. Out of these two fundamental propositions—that law is a science, and that a science is to be studied in its sources—there gradually grew, first, a new method of teaching law; and, secondly, a reconstruction of the curriculum of the school."

<sup>2</sup> My attention has been called to the work of Professor Frank Chapman Sharp, of the University of Wisconsin, "The Influence of Custom on the Moral Judgment." Madison, Wis., 1908. As I shall show later in connection with a mention of casuistry, Professor Sharp's method bears no resemblance to mine.

<sup>3</sup> *American Law Review*, 1888.

<sup>4</sup> *American Law Review*, Vol. XXII., page 18.

Professor J. C. Gray, writing later in the same *Review*<sup>5</sup> (in reply to Dr. Bishop's attacks), says that "no system will work of itself" and that law treatises may be necessary, though not for teaching. "The best material for a legal education would be real cases." Cases, not text-books, are the basis of instruction, supplemented, of course, by lectures. "The method of study by cases is the best form of legal education that has yet been discovered. It is the best because it is most in accordance with the constitution of the human mind; because the only way to learn to do a thing is to do it. No man ever yet learned to dance or to swim by reading treatises upon saltation or natation. No man ever learned chemistry except by retort and crucible. No man ever learned mathematics without paper and pencil."

It should be added that the cases cited are always actual cases, highly condensed, but with all essentials given, including the reasons for the judicial decision. Many case books have been published, and more are constantly being prepared.

## II

*Why adopt this system for ethics?* Well, in part, because other methods seem to me to be ineffective, but chiefly because I am convinced that ethics, too, is a science and must be studied in its sources, viz.: *actual human conduct with the judgments passed upon it by the authorities of whatever group the agent belonged to, for the purpose of the judgment.* In this way we may possibly arrive at an objective ethics whose authority over all men would be equal and imperative. There is a respect paid by all intelligent and instructed adults to the laws of the physical sciences far beyond that ever paid by any but the most conscientious to the pronouncements of any ethical code. If there should be found, upon investigation, laws as absolute for man's successful continuance in society as there are now for his successful resistance to the forces of nature, exhortation of every sort would give place to instruction. The ideal of Socrates would have been attained. Plato's ironical remark that horse-breeding must be taught, but that statecraft "comes by nature," would no longer be pertinent. Definite laws and principles of behavior would have the approval of men of all schools. There would be no Catholic, Protestant, Buddhist ethics any more than there is now a Catholic, Protestant, or Buddhist chemistry, physics, or economics.

And the great value of the experimental method is that it never fails. The hypothesis which led to the making of the experiment may prove inadequate or incorrect: but that is a matter of indifference. One learns as much from such a failure as from success. These are what Bacon called *experimenta lucifera*.

<sup>5</sup> *Ibid.*, pages 756 ff.



Now, what if it should appear, after wide experimentation by many observers, that there is no universal basis for ethical teaching? The result, for all except the morally feeble-minded, would still be valuable. There might be, indeed, for a time, a condition of things comparable to that of Greece under the Sophists. Men might reject laws imposed by external authority on the ground that they are conventional, not natural. Indeed that seems to me to be increasingly the temper of the men of this day. Old standards have lost their value, not only for the flippant multitude, but also for many who are far from flippant.

After the Sophists came Socrates, reducing the chaotic interpretations of life to a rule. The *concept* in its practical working convinced those who knew it that there was some objective order in worlds mental and moral. But, let us suppose for the sake of the argument that no Socratic concept for morals may now be found. Would it not be better for us to know this than to languish in ignorance? There is a state of mind which I am wont to call the *ignorance of bliss*. Surely no philosopher desires it. As Professor Perry has said, "No man wants to be even a *blessed fool*!"

If there be an objective morality which no intelligent man can disregard, its value will be incalculable. We shall know *what* to teach at least. If there be no such objective morality, then it will be wise for men to choose their standards according to temperament and tradition. They will know frankly where they stand, where other men stand, and what may be done in the premises.

Such a conclusion can be reached, one way or the other, only through a scientific study of actual human conduct.<sup>6</sup> It can never be reached through a theoretic ethics based upon a metaphysical system. But let me say now that I do not propose the case method as the only way of teaching ethics. It must be supplemented later in a course by theory; for there are certain questions which can not be met at all by the case method.<sup>6</sup> Note that the case method is not casuistry; for casuistry always presupposes an established moral law. The application of the law to the particular case is sought, but there is never a doubt about the law.<sup>7</sup> The case method seeks to know what the law

<sup>6</sup> It is unjust and indiscriminating to condemn it on the ground that there is no recognition given to the non-empirical character of the moral imperative. Professor Patten's strictures upon the method, when he discussed it at the meeting of the American Philosophical Association, in December last, were based upon an entire misconception of its claims. Professor Patten discussed rather what he knew to be my own deductions from this study than the contents of this paper or the value of the case method.

<sup>7</sup> Professor Patten seems to me simply to have denied this assertion. I invite him to bring proof that it is not so. In this connection, too, I must notice the very interesting and valuable modern casuistry of Professor Sharp in the work

is: and nothing is presupposed unless it be that the cases considered are known in common speech to come under the general heading, moral.

One must frankly face a very great difficulty in the practical employment of this method in teaching ethics. Law students have great masses of cases carefully arranged and coordinated, *each one properly adjudicated, and that unmistakably*. There are few such cases for ethics except when we take law cases over bodily—a thing which I very often do. One of the immediate and imperative needs, if the method is to be more than a local experiment, is an association of those interested in studying, teaching, and practising ethics to prepare, criticize, and publish cases properly arranged and coordinated for the use of classes. No one man is competent to do this. It requires many minds and much time in order that the whole field may adequately be covered.

### III

*What is the value of this method as applied to the study of ethics?* Some will say, This is not ethics at all—it is sociology. Ethics is a normative science. It has to do with what ought to be, and can never be illumined by the study of what is. I challenge this traditional and conventional point of view. Governor S. E. Baldwin, I think, commenting upon the case method in law, scornfully compares the study of cases to the study of multitudes of apples in order to arrive at the law of gravitation. His criticism is more witty than pertinent. The observation of falling bodies under many different conditions by many observers may well lead to enlightenment upon the law of gravitation.

It is just a wide patient observation which has made that law a synonym for all that is valid and permanent in our knowledge. Where is such solidity, permanence, or agreement in ethical law? Honesty, truthfulness, temperance, honor, integrity, magnanimity, and the rest, change their minds when they cross the sea into alien territory.

One of the most notable and valuable books upon ethics of recent before mentioned and in other writings, which has been thought by some to be a prior discussion of this method: but a very slight review of these writings will convince any one that our methods have nothing in common except the inductive principle. His book is based upon replies received to a *questionnaire* addressed to some hundreds of students at Wisconsin. The questions are all casuistical. He seeks to know the ground of individual judgments of moral conduct and to discover if possible the sources of such judgments. I seek to know *what has happened*: and to discover, if possible, a law running through the judgments *which society has made through its duly appointed officials*. I do not, in any case, study opinions, but seek the established facts.

years is the text-book of Dewey and Tufts. Not the least valuable part is Part I., wherein are brought together the various standards of many peoples and religions for purposes of comparison. I do not criticize that admirable book when I say that we need to have a mass of cases drawn from the original sources for each of the groups, clans, nations, religions. The interesting and valuable books of Spencer, Westermarck, Tylor, McLennan, Lang, Spencer and Gillen, Hobhouse, Sutherland, and many others, contain material which is corroborative of many theories; but this material is not in the form needed by us. One of the most valuable of authors for this study is Sir Henry Maine, who presents fully the customs and judgments of society in some of its most primitive forms.

The study of cases brings us into direct and vivid contact with reality. We meet men in concrete situations being judged favorably or unfavorably *by the authorities of the group to which they belong*; and we realize pragmatically the exact value of conduct. Its value is no longer of the closet, theoretic, but demonstrated. That there is need in the study of cases for some heuristic is apparent—otherwise we should be lost in the contemplation of things and never find the Divine Idea. That heuristic, however, should never be the particular ethical theory in which the investigator has been chiefly trained; though it is unavoidable that this theory should color his conclusions somewhat. It should be determined by the nature of the problem considered; and we can have no better example to follow than Socrates in his search for the concept.

I have called the course at Dartmouth *cases of conduct*—a phrase suggested to me by Professor G. H. Palmer when he was told the nature of the proposed experiment. It is not—*emphatically*—*cases of conscience*, and all material should be historical. For this reason cases taken from fiction are not considered. They represent some one man's ideal. Historical cases, properly attested, alone give us the means of objective judgment.

The abundance of material is bewildering, and the outlook for the attainment of order apparently hopeless—but sociology, economics, psychology, and history have had similar difficulties to grapple with and their success is encouraging. I believe that if a small number of earnest investigators shall initiate this method of study, they will find valuable material, not only in the publications of anthropologists, but, also, and most significantly, in the investigations of contemporary sociologists, enlightened prison officials, social workers, and others. The field is ripe for the harvest.

Whether this method may prove more advantageous for the study than for the teaching of ethics, I am not sure. The time of my



experiment—two years—is very short; and the small number in classes—an average of nine members—leaves results as to teaching uncertain; but I feel confident that in the *study* of ethics, at least, this method will be found fruitful.

#### IV

*What is its value for teaching?* First, its concreteness. Theory is strictly relegated to a later part of the course and men are shown the actual penalties inflicted for transgression of group standards, customary morality. Of necessity we can consider penalties only; for there are no courts for the awarding of rewards for action, if we except the Nobel Prize Committee and the Carnegie Hero Committee, which cover a very restricted field.

Secondly, the opportunity to use the Socratic midwifery. In considering a case of murder, theft, arson, adultery, or other, the student gives testimony himself as to the unmistakable judgment of society—not his own opinion or the *opinion* of a judge, but the imposition of a penalty which has been enforced. There is not even a question whether it *should* be enforced. It has been—*voilà tout!*

But I am far from saying that there are no obstacles in the way of its successful use in teaching. Some of them are here given.

1. The unfamiliarity of the young with ethical situations.
2. The extreme conservatism and conventionality of the young.
3. Their inexpertness in abstraction and generalization.
4. The lack of a case book.
5. The apparently discursive character of the course, which often makes the student lose the thread of the discussion.
6. The amount of time needed is greatly in excess of that needed for dogmatic instruction.

Most students, I find, prefer to be taught by the lazy and inefficient lecture method, and as a part of good teaching must always be to lead the student *to think it good*, some concession must be made to their prejudices. It may easily be that the truest method of teaching—and I hold that this is the Socratic—will be, for a time at least, unpopular. In such case one must choose between being thought a good teacher and being one in reality.

The chief value of the case method as *an introduction* to ethical study—and this is all that I claim for it—is that students may and do become deeply interested in, not personal morals only, but also and more significantly, in large social movements and questions of public policy.

A few words about the exact method used in the class-room.

Some preliminary discussion of the aims and methods of the

course is followed by (a) dogmatic instruction in the nature of scientific method; (b) by study of the text of Dewey and Tufts on "Early Group Morality"; (c) by a direct study of several primitive cases of group morality in the first chapter of Dewey and Tufts; (d) by a careful consideration of the four methods of judging conduct in Spencer's "Principles of Ethics," the student being required to present a written digest of each of these chapters which are also discussed in class.

After this much preparation an attempt is made to *educe* from the class a provisional classification of all possible forms of conduct which meet with social judgment. It was found that all cases could be considered under four heads. Cases relating to:

- I. The preservation of life and limb.
- II. The preservation of property.
- III. The preservation of security in the first two.
- IV. The preservation of liberty, bodily and mental, culminating in the preservation of the power to hold and express individual opinion.

While this classification was avowedly tentative and subject to change, it was interestingly confirmed by my colleague, Professor W. H. Lyon, of the Tuck School, Dartmouth College, and a member of the New York bar. He said that the first two classes covered commercial and criminal procedure at law and the last two taken together would correspond roughly to actions in tort. The statement of this fact to the class by Professor Lyon made a visible impression.

At this point the class was invited to discover and bring to the class-room cases under the four divisions taken in order. These were then analyzed according to a formula again *educed* from the class by suggestion on my part, though no undue pressure was brought to bear.

This is the formula:

In order properly to use any case it is necessary

(a) To have it stated in all its essential characteristics and in these alone—following the analogy of law cases.

(b) One must decide which aspect of the case is to be considered, that of the agent or that of society reacting upon his act.

(c) If one shall choose to consider the aspect of social retribution (positive or negative) one must carefully distinguish the object sought to be attained. Sub-headings for this division are

1. Punishment (as a general answer).
2. Example.
3. Prevention of further transgression.
4. Reform of the offender.

5. Restitution to the injured.

6. Revenge (vengeance, "getting even," atonement).

(d) Whether the object sought was actually attained.

(e) Whether the action of society was the cause or only a cause or perhaps not a cause at all, of the resulting change in conduct.

This analysis, while in principle the same, varies in form with different types of cases.<sup>8</sup>

Hundreds of cases, some trivial, some important, were brought in by students and treated objectively. The word *ought* is rigorously excluded. One seeks simply to find out the *results* of the action; and I have applied the term the physics of ethics or ethical physics to our procedure. This seems to me equally characteristic of the text-book used in the second semester, Perry's "Moral Economy." Most of the cases considered were taken from contemporary life. They included all kinds of *killing* from accidental killing to deliberate murder and an effort was made to grade all killings according to the severity of the judgments made upon them. Killing of enemies in war, killing in self-defense, in defense of women and children attacked, etc., was contrasted with killing for revenge, avarice, brutality, and the like. The killing brought about by carelessness in the use of machinery, neglect of sanitary precautions, recklessness in running railroads, etc., where many lives are lost and much suffering is incident, yet little or no punishment is inflicted, was contrasted with cases of manslaughter where a relatively severe penalty is inflicted, to bring out the principles, tentatively assumed, that

1. The group punishes severely anything which threatens group continuance.

2. It is indifferent to killing where such does not appear to endanger the *idea of society*, as in railroad accident cases.

3. Lack of attention and old custom alone are responsible for society's neglect of things more directly subversive of its principle than some which are severely reprobated.

Ideally, for such a study, the judgments of society in all stages should be collated. It is manifestly impossible to do this in the classroom. It is the work of future advanced students and teachers to bring together as many varieties as possible of each of these classes relating to life, property, security, and liberty that material may not be wanting for a sound induction. Meantime, sufficient cases were produced by the class to make a very impressive exhibit. I pro-

<sup>8</sup> Mill's methods of proof should, theoretically, be used. It can not be done with a class perhaps quite untrained in logic. The most one can do is to guide the class in the spirit of these rules.



pose next year to prepare the cases myself, not to depend upon the students, who are sometimes very blind to excellent cases.

Let me insist that this study of cases, however vague it may seem to some from this brief and necessarily imperfect presentation, is always an objective study of what has happened, not in the least of what ought to happen or of individual opinions. It is essentially a legal study. If objection be made that it ought not to be called ethics, I must insist that we need first to find out what is being done before we can with any confidence say what ought to be done; and that which is done will probably enlighten us very much regarding possibilities.

A social group *qua* group will always act in certain specific ways regardless of moral imperatives, so called, regardless of exhortation to mercy. If the group is to survive, treason in any form, when known, must be visited with death, at least during times of stress. It has been so visited.

Cases under the other three great categories, property, security, liberty, culminating in liberty of opinion and speech, must all be taken to be but shadings away from cases of life. In the end all ethics is a question of survival of personality, linked to the survival of the body. All that a man hath will he give for his life, but that life may mean the death of the body. The apex of my pyramid I have called *liberty of propaganda*, for if a man may not express *himself*, he might as well be dead!

In conclusion, I give brief indications of the tentative results derived from this study. They invite and welcome the frankest—but, I hope, understanding—criticism.

The locus of all moral situations is the conflict of interests.

Ultimate decisions rest with the individual.

There is no morality where there is coercion.

The individual may do as he will so long as he does not deny his own nature and purpose in life.

Individuality is the goal of social progress, the satisfaction of all interests, hence, development of *all* personalities, the only ultimate, but this is hardly probable in an evolving society.

The place of *intention* is clearly defined in social practise, but conflicting interests often bring about the punishment of unintentional offenders.

*No universal law has been found except that each organism or organization applauds its upholder and condemns its threatener.*  
TREASON IS NEVER FORGIVEN IF KNOWN TO EXIST.

The only *ought* is the intelligent recognition of the place of all interests and consequent prudent adaptation to them.

*Men get their moral impulsive power through loyalty to some group, however small or large. Intelligence alone is not sufficient to make men moral.*

This is the merest sketch of a method which has been interesting and fruitful to me individually. Should there be shown sufficient interest in it, I hope to elaborate later on. This is submitted in real humility as an effort toward solving a difficult problem, and criticism is eagerly awaited.

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### THEORY OF INDEPENDENCE

AMONG the several elements constituting the philosophical theory now known and vigorously defended as the new realism, the doctrine of independence occupies a central place. The authors of the recent publication bearing the title of this modern school<sup>1</sup> have not failed to realize this, and Professor Perry, of Harvard University, devotes his contribution in the "cooperative" effort to a thorough discussion of the object's independence of consciousness. Stated in its simplest terms, the theory of independence is the view that a real object does not owe its existence or its qualities to the fact of its being cognized. To this is added the belief that the real object is nevertheless such as may be known. In fact all the physical objects of experience are real objects and they are capable of being cognized *in toto*. There is no residuum which is from its nature unknowable. It is clear that such a view commits us to a definite type of viewing consciousness on the one hand and reality on the other. In opposition to Berkeley it is claimed that no object is real if it can be shown that its existence is identical with its being perceived. In opposition to Locke and to Kant it is just as stoutly maintained that it is foolish to look for, or to believe in, without looking for it, some thing at the basis of the qualities perceived, which itself can never be an object of perception. The identical thing which is at one moment an object of perception is at the next moment, if I shut my eyes and cease thinking of it, an object unperceived, but none the less (and equally none the more) a real object. As far as the object and its reality is concerned, my perceiving it or your perceiving it is not merely an unimportant accident; it is even less than that. It does not affect the nature of the object in the least. The object passes in and out of consciousness unscathed.

<sup>1</sup>"The New Realism: Cooperative Studies in Philosophy." New York: Macmillan, 1912.

What, then, is consciousness? It may be an activity, it may be a receptacle, it may be a relation. Its activity may be selective or organizing. But whichever of these it be, it is purely external to the object, and in no sense constitutive of any element therein.

Is there any way in which we can show that this account of the object and its relation to consciousness is true? Clearly the only direct way would be to get hold of a real object when not in any consciousness and see what it looks like. And it is just as clear that this can never be done. To "get hold" of an object is to spoil its purity, and it becomes useless. And so long as we do not "get hold" of it there is no object to examine and we are baffled. This is what Perry calls the "ego-centric predicament."

Stated in these bald terms we have merely a predicament which proves nothing, as Perry rightly concludes, except that it gives us a gentle hint to look around for other ways, even if less direct, of solving the problem. But, after all, it seems to me that the "predicament" has some other connotation besides. Why is it, we may ask, to take a specific case, that I can not have a green color unless I see it? For it is not merely true in general that I must attend to an object if it is to be an object for me. I can not have a green color unless I attend to it in a specific manner; I must look at it. And if I try ever so hard to make clear to myself what green is, I have no way of doing it except by saying that it is the kind of thing I see when I see green. Is this impossibility of explaining green to a blind man simply an accident, without essential connection with the *nature* of green? Does it not rather lead us to think that the very essence of green is that it is seen? And does not this circumstance color the ego-centric predicament in a way that is extremely significant? It seems to suggest that the predicament in question is not an accident, but is conditioned by the *nature* of things. If what was said of color may be generalized in its application, then there may be some warrant in saying that it is because it is the essential nature of objects as such to be in consciousness that we find ourselves unable to attach any meaning to an object out of consciousness, and hence the two varieties of Idealism, the one believing in an unknowable *Ding an sich*, to escape utter subjectivism; the other refusing to admit what can in no case make any practical difference, and hence, identifying the object as experienced with the real object, and claiming that an object must be experienced or it is nothing.

However, the argument from the ego-centric predicament for realism is purely negative. It is intended in the use Perry makes of it to invalidate it as an argument for idealism. It can not, of course, prove realism or even create a presumption in its favor. If I am not



a competent judge of the nature of objects in themselves because I am always in my own light when I wish to deal with them, I must give up the problem, and so must every conceivable investigator, be he man or God, do the same. For whoever the subject be, he can not at the same time eat the cake and have it too. He can not at the same time perceive his object and not perceive it. The predicament is universal.

But is there not an indirect method of attacking the same problem of the relation of object to consciousness? Is it possible by analyzing the various modes of dependence as visible in nature to determine whether the relation of object and consciousness is identical with any of them? If it is, then our problem is solved in favor of dependence, of course, and against the realist contention. But suppose the relation in question is not identical with any of the modes of dependence of one thing upon another as revealed in scientific analysis—what then? Have we a right to conclude that objects are not dependent on consciousness? Who is to warrant that the modes of dependence as observable among objects exhausts the possible kinds of dependence, and what right have we to infer from one kind of relation one totally different? The assumption that objects in their interdependence can throw light on our problem is a begging of the question. If the relation of object to consciousness, which is admittedly baffling, must find its counterpart in the relations among objects themselves, it is not the unique relation which the ego-centric predicament shows it to be.

Let us take an instance of an analogous predicament in a different sphere. A given individual is operated on for appendicitis and dies as a result of the operation. The surgeon maintains that the patient would have died in any case, and that the operation was a safe risk, for it might have saved him. The relatives of the patient may entertain a legitimate doubt and speculate on what might have been if their father or brother had not submitted to an operation. His case was not exactly like the others in the surgeon's experience. Every case is, after all, unique, and what does the surgeon know of the many cases of appendicitis that were operated on and either survived or succumbed—as to whether they would have survived without an operation? Clearly there is nothing but probability, and the only direct experiment, namely, to see whether the person who died under the knife can live without an operation, is made impossible from the nature of the case. Here we have a predicament, and clearly there is no way out of it. No amount of experimentation on any number of patients can prove anything for the individual in question, so long as we maintain that an individual as such has something unique about him, no matter how similar he may be in special aspects to

other individuals of the same species. Besides, every case constitutes a one-sided experiment only, whether it is a case of an operation performed or of one who refused to submit to the surgeon's knife. It is possible, of course, to take a hundred cases, say, of operation, and, comparing them with an equal number of cases of those who refused to submit to an operation, to see the relative percentage of survivals of the disease. This would prove of value on the assumption of uniformity of the disease if we take a large number of cases. Or it is possible by an actual examination of the progress of the disease in a given case to make up one's mind with a high degree of probability as to the condition of the diseased organ and its probable development. But all this is possible because we are dealing here with an individual of a class, and legitimate comparison is in order. Whereas in the problem under discussion it is quite illegitimate to assume that there is a similarity between the relation of an object to consciousness and the various relations among objects themselves. To be sure, the contrary assumption that the conscious relation is unique might be just as gratuitous, and the matter must be solved, if at all, empirically. But so long as we do not know what the nature of the conscious relation is, how can analysis of other relations ever make us wise on the matter? Assuming even that among the relations of objects among themselves there is one in which the dependence or absence of dependence is like that of object on consciousness, we should never know it.

From the foregoing considerations, if they are not altogether beside the mark, it would seem that an attempt to analyze the various modes of dependence in nature as a basis for solving our problem was foredoomed to failure. But we are not left to *a priori* considerations. An attempt has actually been made to solve the problem in this way. Professor Perry enumerates nine classes of dependence as follows: (1) Relation, (2) Whole-part, (3) Part-whole, (4) Thing-attribute, (5) Attribute-thing, (6) Causation, (7) Reciprocity, (8) Implying, (9) Being implied. He describes each class, and adds that while they may not be logically ultimate or coordinate, they are at least intelligible, and so far as our main problem is concerned, complete. Note that in enumerating the kinds of dependence we actually find whose nature is clear to us, we are naturally precluded from counting the consciousness-object relation as one of them, because that is the question to be decided. In calling our enumeration complete we can therefore mean only that, the conscious relation deliberately set aside for the moment, the enumeration is complete, but not otherwise. And, as a matter of fact, abstracting from our ignorance of the matter, the enumeration is complete if the conscious relation is identical with one of the nine in the list, or if not being identical with any

of them it is not a relation of dependence. There is yet a third possibility, namely, that it is not identical with any of the nine laid down by Perry and is yet a relation of dependence of a new kind. In this case Professor Perry's list is incomplete. But Professor Perry, it seems to me, absolutely ignores this last possibility, and does not do full justice to the first. For be it noted, if it is true that the conscious relation is identical with any one of the nine in the list, the latter is complete, to be sure, but the conscious relation is then one of dependence and not of independence. To show that my criticism is justified let us follow Professor Perry further in his argument.

To prove independence, he says, it is sufficient to show that a given relation of two terms does not show dependence, for independence simply means non-dependence. So far so good. But when he adds that independence signifies "the total absence of dependence in the senses enumerated above," we are forced to reply, We have no objection to your defining independence as you see fit, but pray bear in mind that if such is your definition of independence, it means *independence as between objects*. What independence (or dependence for that matter) in the consciousness-object relation may mean, is still an open question.

To proceed. Having explained what dependence and independence are, Professor Perry next lays down a number of propositions concerning the kind of entities that are or are not dependent on each other. Among them is the theorem that "All simple entities are mutually independent." This is proved by showing that simple entities can not be dependent in the whole-part sense, nor causally, nor in the sense of implying or being implied. In a similar way it is shown that "simple entities are independent of the complexes of which they are members." In view of the considerations we have adduced, this can only mean that simple entities as objects, or a simple entity and a complex, both of which are objects, can not be dependent in the manner in which one object may be dependent on another, and hence are independent.

The last step in Perry's argument is to apply the general propositions just mentioned to the consciousness-object relation. "Simple entities," he says, "are not dependent on consciousness, because, as we have seen, there is no sense in which simple entities can be said to be dependent at all." Have we really seen this? The reader who has followed me thus far will, I trust, agree with me when I say that all we have really seen is that a simple entity as object can not be dependent on another simple or complex entity which is likewise object in a given number of dependent relations. As between a simple entity and consciousness there are three possibilities. The object may be dependent on consciousness in one of the ways of dependence



enumerated above, it may be dependent in a totally new way, or it may be independent. Only the last possibility speaks for Perry's conclusion, the two others speak against him.

The first possibility just mentioned requires further justification. How, it may be urged, can a simple entity be dependent on consciousness as a whole on a part, since as simple it can not be a whole composed of parts? Again, as relations of implication are found only in propositions or combinations of propositions, how can a simple entity be dependent in this way on consciousness? I grant the justice of this criticism and admit that while we do not know the exact nature of the conscious relation, which is the matter in dispute, we do know some things that it is not, and we may conclude without detriment to our argument that the conscious relation is not one of part-whole or of implication, or of thing-attribute. There still remains to be considered the causal relation.

Perry says "simple entities can not be causally related because they can not be values of variables, since this would belie their simplicity." He is enabled to say this because in defining causation he deliberately declared out of court the theory "that causation is creation *ex nihilo* by an 'activity.'" In justification of this he "appeals to the fact that the 'creation' theory has long since been discredited in science and all other exact discourse." He accordingly defines cause in its narrowest sense to mean "those other values which together with time determine the value of a future complex." It follows from this that a simple entity can not be the effect of a cause "since it can not be the value of a variable."

Once more we agree with him as far as he goes. If in science, *i. e.*, in our dealings with the relation of objects among themselves, the causal theory of "creation" is discredited, then one object which is a simple entity can not be dependent as an effect on another object. But the consciousness-object relation may be a type of causal "creation," as is indeed claimed by the subjective idealists. This is the very matter in dispute, and no amount of discredit on the part of science is relevant for our discussion.

But there is still another way in which Professor Perry proves that an object, even if it be complex, is not dependent on consciousness if we can account for it in another way. It is thus not exclusively determined by its relation to consciousness, and hence not causally dependent on it. Thus "the proposition  $c^2 = a^2 + b^2 - 2ab \cdot \cos \gamma$ , where  $\gamma$  is the angle of a triangle,  $c$  the opposite side, and  $a$ ,  $b$ , the adjacent sides" is not dependent on the cognitive relation, since even if it were determined by it, it is not so exclusively. For we can derive it, as in fact every mathematician does, from the logical and mathematical systems to which it belongs.

Will the reader think me too severe if I charge this argument with a confusion of ideas, or else with a begging of the question? If the idealist opponent maintained that the conscious relation is but another type of object-object relation, the above argument would be correct and relevant. But the whole point of the idealist contention is that while all objective causal determination is longitudinal, the conscious relation is transversal and ultimate and all-inclusive, determining the cause as well as the effect absolutely and not merely relatively. The objective cause determines one out of many possible effects; it explains to us why this particular effect rather than another has taken place; it explains, in other words, the *essence* of the effect, to use Scholastic terminology. The subjective causality of consciousness determines that there shall be cause as well as effect, it determines the *existence* of the cause as well as of the effect. The reason the mathematician has nothing to say about the cognitive relation of his theorems and formulæ is because as mathematician he deliberately ignores this aspect of things, or if he happens also to be a philosopher, he assumes it to be there, though without affecting his results in any manner.

We see now that our original suspicions, as to the success of an empirical method like the above enabling us to solve the problem of independence, were more than justified by an analysis of an actual attempt in that direction. We are thus as far as ever from a solution of the problem.

An obvious stricture on my criticism is that it throughout is based on the assumption that the consciousness-object relation is unique. I am willing to admit this. But not until I have protested that the realist discussion is similarly based on the contrary assumption that the consciousness-object relation is only another type of object-object relation. Assumption for assumption, the former seems to me to have more in its favor whether realism or idealism be the true doctrine.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Modern Science and the Illusions of Professor Bergson.* HUGH S. R. ELLIOT. With a preface by Sir E. RAY LANKESTER. New York: Longmans, Green, and Company. 1912. Pp. xix + 257.

A discussion of the same set of problems by Elliot and Bergson presents a study in contrasts. Elliot is interested mainly in what we already know; feels that the way to learn more is to continue the established methods; and is not afflicted with doubts as to whether our knowledge and

methods are adequate to reality. Bergson is impressed mainly with the extent and depth of the unknown; by the fact that our concepts and definitions, our language and thought, by no means fully express reality. He tries his hand at expressing some of this unexpressed material, and can do so only by using words quite out of their usual meanings, by employing them sometimes in one sense, sometimes in another, and by adopting figures of speech. He thus becomes obscure, and apparently, if not actually, self-contradictory. Further, he feels that our established method of getting knowledge not only has not grasped the inner nature of reality, but is inadequate to the task of doing so, and must be supplemented or replaced by another. All this is intensely repugnant to the man of set, positive, dogmatic scientific views. Elliot, with his close-to-the-ground turn of mind, sets out to interpret the soaring Bergson in an absolutely literal fashion, giving to all of his words their dictionary meanings. It is not surprising that he can make nothing of Bergson but foolishness,—for it must be admitted that the task is sometimes a difficult one even for him who takes up Bergson with the best of wills to search for truth under all sorts of deceptive disguises.

The relation of Bergson to science, the criticisms which he makes of scientific method, and his proposal to supplement it by the use of intuition, are matters worthy of serious examination; and an exposition of the actual content of Bergson's metaphors is required before the real value of his work can be judged. These are the useful tasks to which Elliot addresses himself. But his extreme literalness, together with his unshakable conviction that nothing good can come out of metaphysics, are bound to prevent his grasping any original ideas of value in Bergson, if such there be.

The author and his prefacer begin by arousing the antagonism of such readers as are not already partisans of their point of view, by violent and sweeping condemnation of all metaphysics. "The attitude maintained throughout this book is that metaphysics is a maze of sesquipedalian verbiage, beyond the reach of science to defend or refute" (p. 6). There is a good brief presentation of the grounds for this attitude, but the scoffing, triumphing tone maintained throughout the book will repel many readers.

After an exposition of Bergson's doctrines, the real burden of the book is reached in the chapter entitled "Reasons for Dissenting from the Philosophy of Professor Bergson." This contains a useful criticism of Bergson's methods of argumentation. Four diverse fallacious methods of drawing conclusions are set forth as common throughout his works. (1) Bergson passes in review the various theories set forth to explain a given matter, rejects each (often on good grounds), then commits the fallacy of assuming that this rejection establishes his own theory. Every careful reader of Bergson will recall with Elliot innumerable cases in which he has been astonished at finding a doctrine treated as established when not a single positive argument for it has been set forth. (2) The second fallacy to which Bergson is prone is, the abuse of the argument from analogy—the author choosing carefully such an analogy as will



permit him to draw the desired conclusion. Unless we are to hold that all Bergson's apparent arguments from analogy are mere illustrations, to make clear, without argument, the author's conception of the relation in question, the unprejudiced reader can here hardly fail to agree with Elliot. (3) Bergson makes, without evidence, many positive statements as to matters of fact, that are extremely doubtful or worse; he then uses these as data for deduction. On this count again it appears to the reviewer that a verdict of guilty must be given; one can not avoid the impression that Bergson, having a conclusion in mind, chooses premises to support it. Indeed, we may go farther; one is continually astounded by Bergson's setting forth, after an elaborate argument, a conclusion that does not in the least follow from the facts adduced under the appearance of premises, the argumentation being purely a form. (4) Elliot cites Bergson's "hopeless and irremediable misuse of language; throughout large sections of his work the words are mere forms or sounds without significance behind them" (p. 59). Here we may well be cautious. Bergson appears in many cases to be attempting to express by existing words ideas for which no words are in use. Often, in order to grasp his meaning, it appears almost necessary to have had independent glimpses of the same thought. The reviewer can not claim to fulfill this condition in many cases, but there are perhaps enough such to set the reader on his guard lest some one else might grasp a meaning where he perceives only a waste of words. I shall attempt to show later that Elliot's method of interpretation has led him to miss points of real interest.

The reviewer can but feel that Elliot's arraignment of Bergson's method of argumentation is on the whole just. Doubtless, as Elliot remarks, every possible form of fallacy can be illustrated from his works. Yet it is commonly admitted also that every literary fault can be illustrated from the works of Shakespeare. So far as the work of Bergson is of any value, this lies in its bringing into prominence certain large ideas, inducing men to consider them, as a poet might do. The presentation and argument in Bergson appear to stand logical and scientific analysis to about the same extent that the poems of Ossian might. A reading of "Creative Evolution" in a seminary of which the reviewer was a member convinced all, I believe, that to read the book for profit one should neglect the reasoning and the details, and attempt to seize only the main conceptions; otherwise the latter are lost sight of in the dust of the fallacies, contradictions, and errors of fact that are beaten up.

But since Bergson presents his ideas in logical forms, such a criticism as Elliot makes is well in place. It is in missing some of the large ideas that Elliot fails.

One of Bergson's general ideas, however, Elliot does not miss; the doctrine that instinct or intuition is the best guide to truth in dealing with living things. Upon this Elliot centers his main attack; to the reviewer this appears a valuable part of the book. The argument against intuition as a revelation of truth may be summarized as follows (following Elliot mainly, but not absolutely):

1. Bergson presents no positive argument to show that intuition gives truth; he merely assumes this from his argument that intellect does not—an example of the first form of fallacy above cited. To this might well be added the point that the argument against the intellect, namely, that it serves practical ends, holds equally against instinct; the latter is as much the slave of practical ends as the former. Bergson's argument from practical use, if it has any validity at all (which is certainly not clear), logically leads only to the conclusion that mankind can not know reality, there being not the least ground for making an exception for instinct.

2. In the field of verifiable fact intuition is wrong in ninety-nine cases out of a hundred; no one would seriously think of making it a *test* of truth; it requires verification.

3. Where no test is possible, there is no reason to suppose intuition more reliable.

4. The only ground which could be urged against the conclusion last stated would be that intuition leads to unanimity in all persons that employ it. But this is notoriously the reverse of the fact.

In a chapter on the "Progress of Philosophy," Elliot attacks this question in another way, attempting to show by tracing the history of knowledge that progress has consisted precisely in getting rid of instinct or intuition as a criterion of truth. And in a final chapter he attempts to show that the positive function of philosophy, so far as distinguishable from science, is just to clear from the human mind the burden of ideas arising from the natural instincts. The exposition here is one well worthy of consideration; one with whose general tenor men of science, at least, are likely to agree; it is therefore unfortunate that the intolerant tone pervading it, along with the rest of the book, is likely to prevent its receiving a fair hearing. Certainly a reversion to instinct as a test of truth would be one of the most serious backward steps conceivable. In defense of Bergson it may be urged that he does not (or at least in some passages he does not) propose to substitute intuition where other methods are applicable,<sup>1</sup> but the limitations, which would exclude intuition from perhaps all cases where most votaries of Bergson would be tempted to employ it, seem so incompatible with the great rôle that Bergson otherwise gives it, that a setting forth of the positive dangers of the intuitive method is quite in place.

Elliot further takes up a number of Bergson's positive scientific doctrines, controverting them, often successfully. Where he fails is, we may repeat, in grasping certain leading ideas, which must form the justification of Bergson's work, if there is such justification. We may cite as a characteristic example one of the main ideas in the book on "Creative Evolution." One of the scientific dogmas which Elliot defends is the doctrine of mechanism, asserted as the theoretical possibility of prophesying all that may occur in the future from a knowledge of all that has occurred hitherto. In connection with Huxley's statement of this doctrine, Bergson notes that we can not, as a matter of fact, predict what

<sup>1</sup> Compare "Creative Evolution," transl., page 177.

will happen, and believing as he does that this betrays the essential nature of reality, he remarks "we can not sacrifice experience to the requirements of a system." This touches off a characteristic explosion in Elliot. "He [Bergson] suggests that Huxley has done so, being apparently unaware that no man on earth would have been so little likely to make such a mistake. What experience is sacrificed? What system compelled him to sacrifice it? The habit of using words without any significance is almost a disease with Bergson," etc., etc. (p. 70). Now it is evident that Bergson's remark is a clear and excellent way of expressing the patent fact that the statement as to prophesying all future conditions leaves aside our every-day experience, in deference to our belief in a mechanistic system. Elliot's dogmatic intolerance prevents his seeing this; but worse, it prevents his grasping the underlying idea. To the reviewer there appears to be absolutely nothing in science or scientific method that commits one to this theoretical possibility of prophesying the future from the past. It appears possible to remain scientific and yet to defend a view such as is outlined in the following:

What happens in matter and energy depends on the conditions. The only way to determine what will happen under given conditions is by observation and experiment—proceeding on the basis that under the same conditions the same thing will happen. When new conditions arise, only experience can determine what will happen. Among the conditions to be considered are the configurations of the particles of matter. Under new configurations, it can not be predicted what will happen till this has been observed. Now, in the infinite number of particles of which the universe is composed, it is not impossible that configurations may arise that have never before been realized. It is therefore impossible to predict what will happen under those configurations.<sup>2</sup>

The result would be that future conditions are not even theoretically predictable from the past,<sup>3</sup> yet there would be no breach of determinism; all science would have developed just as it has done; and there would be no obstacle to its future progress. The possibility of such a view, thoroughly compatible with all the results of science as well as with our daily experience, has been brought into greater prominence by Bergson than perhaps ever before; and this appears decidedly worth while. It may be urged, of course, that Bergson adds to this conception some things that appear less compatible with science; for example, indeterminism, result-

<sup>2</sup> Even supposing that we had grounds for predicting what those configurations will be.

<sup>3</sup> As sometimes put, the statement of mechanism as this possibility of prediction involves what might be used as a *petitio principii*; for example, that "with a complete knowledge of the laws of mechanics, physics and chemistry" (Elliot, page 69), the future could be prophesied. If this "complete knowledge" be interpreted to include a knowledge of what will happen under configurations never yet realized, so that there has been no opportunity to obtain this knowledge, the *petitio principii* is evident. So understood the statement merely asserts that if we knew what would happen under any configuration whatever, we would indeed possess this knowledge.



ing from his peculiar doctrine of time as an agent. But it is surely more profitable to select from the suggestions of such a writer those things which appear of value, and reject the rest, than to force ourselves, with Elliot, to condemn the whole as trash.

Similar criticism might be made of Elliot's treatment of other points, notably of all matters bearing upon consciousness. His determination to take Bergson with absolute literalness leads him again and again into triumphant misunderstandings. Thus, Bergson's assertion that in the field of conscious states "there is no essential difference between passing from one state to another and persisting in the same state" is another way of setting forth the same point that Elliot expresses when he calls ideas processes rather than things (p. 142). Yet Bergson's manner of stating the point induces in Elliot the reply "that if we are to believe that, there is simply no limit to the absurdities which might be founded upon it" (p. 62). Examples of this sort of thing might easily be multiplied.

No discussion is attempted of Bergson's interesting criticisms regarding the limitations of scientific treatment, the inherent inadequacy of scientific analysis, and the effect of this upon the mental outlook of men of science; possibly Elliot feels that they are unworthy of consideration. It appears to the reviewer that the points Bergson makes as to the necessary inadequacy (the eternal incompleteness) of scientific analyses are correct and valuable, and that failure to realize them does at times lead men of science to such a narrow dogmatism as that shown by Elliot. But there seems no reason why the man of science *must* fall into this condition, as Bergson appears to assume.

If Elliot has been successful in presenting to us Bergson as a terrible example of the evils of irresponsible speculating, he is perhaps no less so in furnishing us an example of that "certain new scholasticism that has grown up" around science, the mention of which, by Bergson, Elliot (p. 90) so strongly resents.

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*Experimental Studies of Mental Defectives. A Critique of the Binet-Simon Tests and a Contribution to the Psychology of Epilepsy.* J. E. WALLACE WALLIN. Baltimore: Warwick and York. 1912. Pp. vi + 155.

This is number 7 of the Educational Psychology Monographs edited by Whipple and gives the results of mental and physical tests applied to a colony of 333 epileptics. It throws added light upon our knowledge of the epileptic mind, but the chief interest of the book to the general psychologist and educator will undoubtedly be its accurate and critical study of the Binet-Simon tests. The author shows conclusively that a difference in the method of grading, *i. e.*, of computing the mental age, will give rise to a perceptible difference in the distribution of homogeneous groups of subjects, that there are particular ages at which these differences are very

great, and that therefore this difference may vitiate results for comparative purposes. In the case of 41, or 39 per cent., of the children tested a difference of one year or more was found, and an extreme case showed a difference of 3.2 years.

The author has also shown the great lack of uniformity in the difficulty of the tests for the same ages for about half of the ages of the scale—a lack of uniformity, as he says; “amazing from the standpoint of the precision demanded by the standards of scientific research.” He makes use of the findings of Goddard, Johnston, and Bobertag on normal children to support his conclusions, and agrees with those authors in holding the tests for ages VI. and IX. to be disproportionately difficult and those for age X. to be too easy. He gives the exact details in regard to each test as to where his findings agree or differ. It is rightly pointed out that what is required is a scale specially adapted to normal American children.

The third chapter gives interesting comparisons between the Binet tests and other physical and mental tests, *e. g.*, dynamometer, ataxia-graph, memory, rate of reading, etc. The result of these interesting comparisons is that the author believes that the scale in spite of its imperfections “affords a practical, easily administered, objective, systematic method of grading defective children and adults . . . which approximately locates the mental station of the individual.” At the same time he sounds a note of warning in that it should be considered only as a preliminary and not as a final rating of the individual tested. The reviewer believes that this point can not be too strongly emphasized at the present moment, when boards of education are beginning to provide special schools and are allowing teachers with little or no special training to apply the Binet scale. In only too many cases is the first test looked upon as final, and the child is promptly classified as defective or not, as the case may be. Dr. Wallin’s book ought to be in the hands of all such “experts.”

The last chapter<sup>1</sup> gives accurate and minute regulations as to how each of the 62 tests ought to be applied.

Scattered throughout the work are 26 tables giving all the figures upon which the author bases his conclusions. These will be extremely valuable for other workers in the field of mental measurement, and, in fact, the whole book is a decided step towards a clearer understanding of the requirements of the long-desired mental measuring rod.

RUDOLF PINTNER.

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*An Introduction to Psychology.* WILHELM WUNDT. Translated from the German edition by RUDOLF PINTNER. New York: The Macmillan Company. 1912. Pp. xi + 198.

The purpose of this little book in the words of the preface is “to introduce the reader to the principal thoughts underlying present-day experimental psychology.” With extreme simplicity the veteran Leipziger here resumes the more important facts and principles of the “new” psychology. The simplicity is not of the kind to perplex by its audacious plati-

<sup>1</sup> Reprinted from the *Psychological Clinic*, December 15, 1911.

tudes; the student will not turn aside with a "Yea, but who knoweth not these things?" Definite principles and specific propositions, coordinated into a meaning whole are involved throughout. Yet the book is no "Reflexions-" or "Gedanken-psychologie." The experimental evidence, though of the most elementary nature—being confined to simple sensory, memory, and affective tests—is nevertheless adequate to its purposes.

It must have been with no inconsiderable satisfaction that the author put together these chief results of the "new" psychology, a science so largely of his initiative, owing its prestige to his influence as a teacher and scholar. Since the establishment of the famous laboratory in 1879 there have been over-enthusiastic experimenters who had no principle in mind. And there have been investigators who preferred other forms of inductive evidence. But all have noted with interest the efforts to mediate between experimental observation, with its more or less impressive mathematics, and an analytical philosophy of mind; and much, if not most, of the "new" has become part and parcel of commonly accepted doctrine. This does not imply that the Wundtian psychology does not contain what is characteristic or even debatable. Such, however, can but add to the vital interest of the student, who will here find a very condensed, delightfully written account of mental phenomena from the point of view of their actuality and of the creative resultants of all psychical combinations. History will ascribe honor to Wundt not only for making psychology more scientific, but for making philosophy more acceptable in the twentieth century.

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## JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. January, 1913. *The Refractory Phase of the Protective-wink Reflex* (pp. 1-8): RAYMOND DODGE. — A further study of the protective-wink reflex in which the records were made by the author's familiar photographic recording device. No complete refractory phase was found, contrary to the reports of Zwaardemaker and Laus. There seems rather to be a tendency not to repeat the act. To repeat reactions rapidly would then require constantly increasing stimuli. *The Curve of Forgetting* (pp. 8-33): O. E. FINKENBINDER. — A memory experiment in which nonsense syllables were used. Considerable care was used in the preparation of the material and in the routine of the experiment. The results, in the main, agree with the results of other investigators in this subject. *The Electrical Supply, and Certain New Additions to the Laboratory Equipment, in the Stanford University Psychological Laboratory* (pp. 33-35): LILLIEN J. MARTIN. — A note on the additions in color-mixing apparatus. *Practice and the Work Curve* (pp. 35-52): FREDERIC LYMAN WELLS. — A discussion of the work and fatigue curve experiments followed by an experiment on the effect of practise on



endurance. Consistent results on endurance were not obtained. Improvement shows itself in various individual forms. *Paramnesia in Daily Life* (pp. 52-66): THEODATE L. SMITH.—A study of about forty-five cases in which enough facts were known to permit a psychological analysis. *Paramnesia seems to result from partial amnesias that cause distorted memory images.* *A Comparison between Experimental Data and Clinical Results in Manic-depressive Insanity* (pp. 66-99): EDWARD K. STRONG, JR.—A comparison of the clinical descriptions of eleven patients with the results of five tests given to each. *The Use of the Term "Function" in English Text-books of Psychology* (pp. 99-124): CHRISTIAN A. RUCHNICH.—The term "function" was found used with several different meanings in the various books and often in the same book. Text-books by Angell, Baldwin, Calkins, Dunlap, James, Judd, Ladd and Woodworth, McDougall, Myers, Pillsbury, Read, Stout, Thorndike, Titchener, and Yerkes, had been examined. *Discussions: Professor Martin on the Perky Experiments* (pp. 124-132): E. B. TITCHENER.—A criticism of the work done by L. J. Martin in her repetition of the Perky experiments, as noted in her "Die Projektionsmethode und die Lokalisation visueller und anderer Vorstellungsbilder," *Zeits. f. Psych.*, Vol. LXI., 1912, pages 321 ff. *Book Reviews:* S. de Sanctis and others, *Contributo Psicologici del Laboratorio di Psicologia Sperimentale della R. Università di Roma*: THEODATE L. SMITH. A. T. Poffenberger, Jr., *Reaction Time to Retinal Stimulation, with special reference to the time lost in conduction through nerve centers*: SAMUEL W. FERNBERGER. Arthur Jerome Culler, *Influence and Adaptability*: SAMUEL W. FERNBERGER. John Welhoff Todd, *Reaction to Multiple Stimuli*: SAMUEL W. FERNBERGER. Branislav Petronievs, *Principien der Metaphysik*: RADOSLAV A. TSANOFF. August Gallinger, *Das Problem der objektiven Möglichkeit. Eine Bedeutungsanalyse*: RADOSLAV A. TSANOFF. G. E. Partridge, *The Genetic Philosophy of Education*. *Book Notes:* W. F. Barrett, *Psychical Research. Proceedings of the American Society for Psychical Research*. W. H. B. Stoddart, *Mind and its Disorders*. Archibald Church and Frederick Peterson, *Nervous and Mental Diseases*. Maurice Craig, *Psychological Medicine*. Wilhelm Wundt, *Elements der Volkerpsychologie*. Hugo Münsterberg, *Psychologie und Wirtschaftsleben*. T. Loveday and J. A. Green, *An Introduction to Psychology*. Theodor Elsenhans, *Lehrbuch der Psychologie*. William McDougall, *Psychology, the Study of Behavior*. Lillien J. Martin, *Die Projektionsmethode und die Lokalisation visueller und anderer Vorstellungsbilder*. Th. Ziehen, *Ueber die allgemeinen Beziehungen zwischen Gehirn und Seelenleben*. William Stern and Otto Lipman, *Zeitschrift für angewandte Psychologie und psychologische Samueelforschung*. John Aulde, *The Clinic Problem in Nutrition*. Georges Rouma, *Le langage graphique de l'enfant*. George Stuart Fullerton, *The World We Live In*. Georges Bohn, *Die Entstehung des Denkvermögens*. Edgar James Swift, *Youth and the Race*. Charles A. Ellwood, *Sociology and its Psychological Aspects*. James Quayle Dealy, *The Family and its Sociological Aspects*. Ernest Jones, translated by E. H. Sachs, *Der Alptraum*. Karl

Furtmuller, *Psychoanalysis und Ethik*. R. Hennig, *Die Entwicklung des Naturgefühls*. P. Saintyves, *La simulation du merveilleux*. H. L. Hollingworth, *The Influence of Caffein on Mental and Motor Efficiency*. J. H. Todd, *Reaction to Multiple Stimuli*. U. Josefowici, *Die psychische Vererbung*. Aster und Anderen, *Munchener philosophische Abhandlungen*. Benj. Rand, *The Classical Psychologists*.

RIVISTA DI FILOSOFIA NEO-SCOLASTICA. December, 1912. *Socialismo e filosofia* (pp. 705-722): P. ROTA. — Socialism attempts to return to philosophy. But it can not be made to agree with the systems with which it is apparently connected (positivism, Bergsonism, Fichte's philosophy). *La teoria dell' anima e la generazione delle forme secondo Pietro d' Albano* (pp. 723-727): B. NARDI. — Pietro d'Albano is not an Averroist, as has often been believed. His doctrine on the two points in question agrees with the doctrine of St. Thomas. *Il Platonismo in Francia nel secolo XIX* (pp. 738-755): C. HUIT. — Platonism found its most illustrious exponents and defenders among the disciples of Victor Cousin. *Una lettera inedita di Vincenzo Gioberti* (pp. 756-758): A. DYROFF. — A letter of Gioberti to the German philosopher Clemens; Paris, October 4, 1847. *A proposito della dimostrazione tomistica dell' esistenza di Dio* (pp. 758-769): A. AUDIN. — The five proofs of God's existence given by St. Thomas are not independent of one another. *Analisi d'opere*. B. Varisco, *Conosci te stesso*: G. TREDICI. T. Lipps, *Psychologische Untersuchungen*: F. OLGATI. M. Barillari, *Diritto e filosofia*: R. FUSARI. F. Brentano, *Aristoteles und seine Weltanschauung*: B. NARDI. B. Soto, *Petri Compostellani de Consolatione rationis libri duo*: B. NARDI. V. Fazio-Allmeyer, *Galileo Galilei*: F. OLGATI. A. Poulain, *Delle grazie di orazione. Sommario ideologico delle opere e delle riviste di filosofia*.

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## NOTES AND NEWS

THE following is a translation of a notice which has recently appeared in several European philosophical journals:

"The undersigned teachers of philosophy in the higher institutions of Germany, Austria, and Switzerland take occasion to protest against the appointment of representatives of experimental psychology to chairs in philosophy. The scope of experimental psychology has so extended that it has long been recognized as an independent study requiring all the energy of specialists. Not only have chairs been created for psychologists, but professorships of philosophy have been repeatedly filled with men whose activity is devoted chiefly or exclusively to the experimental study of the mind. This is comprehensible when we remember the earlier stages of these sciences. It was formerly inevitable that both studies should be represented by the same scholar, but with the progressive development of experimental psychology, conditions have resulted which are unfortunate for all concerned. Because of the withdrawal of chairs particularly devoted to it, serious damage results to philosophy, in which the interest of our academic youth is steadily increasing. This is the more disturbing since the scope of philosophy is becoming more extensive, and since just now when there is so much philosophical agitation, the students should not be denied opportunity to become scientifically acquainted through the academic teachers with the general questions concerning life and the world.

"In consequence of all this, the undersigned regard it as their duty to point out to philosophical faculties and also to the departments of education this increasing disadvantage to the study of philosophy. For the common interests of both sciences careful thought should be taken that the status of philosophy in the life of the higher institutions of learning should remain assured. Therefore, experimental psychology should in the future be promoted through the establishment of its own chairs, and wherever the old philosophical professorships are held by representatives of experimental psychology, care should be taken to found new chairs of philosophy."

The above protest is signed by one hundred and seven of the leading professors and teachers of philosophy in Germany, Austria, and Switzerland.

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At the meeting of the Aristotelian Society on May 5, Mr. R. P. Hardie was elected a member. Miss L. S. Stebbing read a paper on "The Notion of Truth in Bergson's Theory of Knowledge." Bergson's conception of truth is closely connected with his theory of intuition. This theory he has worked out from two different standpoints—epistemological and evolutionary. The relation of intuition to instinct and to intellect is not defined; its essential nature is described as "sympathy," sometimes intellectual, at others instinctive, as opposed to intellect. But intellect is condemned because its function is the satisfaction of practical needs. The Bergsonian notion of truth is developed by M. Le Roy and M. Wilbois. Dr. Schiller claims that the theory is pragmatic. But this can not be



maintained, since the Bergsonian intuitionist holds that knowledge of the real must be gained by turning our backs on questions of utility. Truth is action or life, and can be known only by living the truth, so that knower and known are one. There seems to be here a resemblance to Aristotle's doctrine of *νοῦς ποιητικός* rather than to any form of pragmatism. Intuition is the sole philosophic faculty, because by means of it the knower can plunge into the flux of reality, and know it from within by being one with it. The difficulty of this theory is that the intuition must be incommunicable, hence leads to scepticism. Further, truth is identified with reality; but this seems fatal to any theory of truth. Only by admitting the non-existential character of truth and its dependence upon the distinction of knower and known can it be maintained that truth is complete, even though it be *about another*. The failure to recognize this is responsible for the breakdown of Bergson's theory of truth.—*Athenæum*.

AN invitation has been extended to those interested in philosophy to attend the Fifth International Congress of Philosophy which will be held in London from August 31 to September 7, 1915. It is important that those who will participate actively in the Congress shall indicate their willingness and send to the executive committee the subjects of their papers, together with the sections for which the papers are destined, as soon as possible. The work of the Congress will be, as in former years, divided into sections proposed as follows: (1) General Philosophy and Metaphysics; (2) Logic and Theory of Knowledge; (3) History of Philosophy; (4) Psychology; (5) Esthetics; (6) Moral Philosophy; (7) Political Philosophy and Philosophy of Law; (8) Philosophy of Religion. Every member of the Congress, whether attending as a delegate or by invitation or in a personal capacity subscribes the sum of £1. All communications should be directed to the Secretary of the Congress, H. Wildon Carr, Esq., D.Litt., More's Garden, Chelsea, London, S. W. Payments should be made to Dr. F. C. S. Schiller, Corpus Christi College, Oxford, England.

W. C. RUEDIGER, professor of educational psychology, and acting dean at the George Washington University since the death of Dean Hough last September, has been appointed dean.

PROFESSOR ERNEST C. MOORE, head of the department of education at Yale University, has received an offer to become professor of education at Harvard University.

THE Tenth Annual Conference of Experimental Psychologists was held in the psychological laboratory of Fisk Hall, Wesleyan University, April 10 to 12.

PROFESSOR OSWALD KÜLPE has accepted the call of the University of Munich, and will occupy the chair of philosophy formerly held by Th. Lipps.

ON May 6, 7, and 9 Mrs. Christine Ladd-Franklin gave at Columbia University three lectures on Color-Vision.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE SOCIAL IMPLICATIONS OF CONSCIOUSNESS<sup>1</sup>

THE following was prepared in response to an invitation to present for purposes of discussion a doctrine which I had already published elsewhere.<sup>2</sup> My excuse for printing what is in some degree a repetition is partly the hope that the condensation of the argument will serve to make the point clearer, and partly the belief that a different mode of approach will throw a stronger light upon what I conceive to be the broader issue, namely, the meaning of consciousness.

My subject is the social implications of consciousness. First, then, I must state what I mean in general by consciousness. According to my view consciousness is a process of *forming an idea of an object*. This means that consciousness is not a series of mental states, or a series of impressions; nor is consciousness to be measured by the degree of agitation or excitement. An impression may doubtless be a fact of consciousness, but so far as it is mere impression it stands for a minimum of consciousness. Suppose (a drastic illustration) that some one should here and now strike you in the face. The shock would be overwhelming, the impression astounding, but only as you "collected your senses" and formed an idea of what had happened to you could you be said to be really conscious. Again, suppose that, with the sentimental lover of music, you "abandon yourself to the impression." This will mean probably that the music stimulates a delightful revery in which the composition in question is largely forgotten. You must attend to the composition and form some idea of its structure if you are even to be aware of what is being played. But the same is true of the merest sense-perception. I have an impression of something on the table before me. Only as I definitely analyze my impression into, and

<sup>1</sup>Read at the Annual Meeting of the Western Philosophical Association, March, 1913.

<sup>2</sup>"Individualism." New York, 1911.

thus form an idea of, say, this bunch of keys, am I conscious of that something. In my own experience I find that, even in such simple cases, the analysis and formulation of what is commonly supposed to be simply "given" often covers an appreciable period of time.

This means that consciousness is identified with "apperception," or, in James's figure, with the focus rather than with the fringe; but not that the fringe is excluded. Consciousness, as I understand it, is a matter of degree, and the degree of consciousness is measured by the degree of clearness or distinctness. This means, again, if you please, that my conception of consciousness is "intellectualistic"; but not abstractly intellectualistic. As against the critical connoisseur, the romantic lover of music takes comfort in the assumption that, if his own ideas are vague, at least he has a superior appreciation of any given composition in its concrete totality, and thus a superior appreciation of its beauty, or value. But to form an idea of an object is not to substitute an abstraction for the object—a scheme of the sonata-form for the first movement of Beethoven's "Eroica," a bunch of keys for *this* bunch of keys, a "fellow creature" for your friend John. Abstraction is indeed a part of analysis, but its sole purpose is to enable you to grasp your object as a concrete unity of distinct aspects; and on the other hand, it is only so far as you perform this operation that you can be said to appreciate either the unity and beauty of a musical composition or the individuality of a friend.

Now for a definition of social consciousness. For this purpose I will ask you to place side by side three typical situations. The first is the mechanical situation, as illustrated in the relation of parts in a typewriter. These parts work together according to mechanical laws. But their working together is not a social process—for the reason that it is not a conscious working together. The second is the market-situation, as illustrated, say, by the stock-market. This situation, merely because it represents an aggregation of human beings, is very often described as a "social situation." But so far as the market is merely a play of economic forces, the situation here does not differ from that of the typewriter; merely as such, the economic laws work themselves out as independently of personal intention as the mechanical laws. And so far as the relation of men is a matter purely of economic law, the situation is not a conscious situation. As a matter of fact the relation of men in any large market is not a very conscious relation. What each buyer or seller finds before him is chiefly an opaque and obscure fact which he calls "the market." To be sure, he is in contact with men; but he does not for a moment suppose that the demands with which he has to deal originate with those men. Where they originate



he does not definitely know. Men can "estimate" the market, as we say, but it is difficult to know it. And so the consciousness of the situation is at the stage, relatively speaking, of mere impression. Suppose, however, that some participant should undertake to analyze the market and form an idea of it. This would at once bring him to "the men behind the market." And here, whether the men turned out to be a small group of speculators or a much larger group of legitimate investors, he would find himself in the presence of so many personal demands, each representing, more or less clearly or vaguely, a personal scheme of life, with which he would then, merely by his analysis of the market, be brought into a more or less personal relation. Now, it is evident that, in most cases, the personal demands represented in the market are so vastly numerous and so complex in their differences and possible relations that a really clear analysis of the concrete market-situation is beyond the capacity of any human mind. It is just for this reason that the economist is obliged to deal with an abstract economic man governed by abstract economic laws.<sup>3</sup> For a better view of the case where men are consciously related we turn, then, to a third situation, which is that of "the social circle," properly so called, or the family. For a better view, I say; for it would be false to suppose that no trace of the quality of the social circle is to be found among men in the market. In the social circle, however, or in the family, the several parties to the relation not only work together, like the parts of a typewriter, but know that they work together, each with a distinct idea of the other. Here, then, we have a clearly social situation and a socially clear consciousness.

These contrasts will, I hope, explain what I mean by social consciousness. To be conscious, I have said, is to form an idea of an object. Social consciousness, I should hold, then, is fully defined by the addition of the word "mutual." And I beg you to note all the implications of "mutual." When consciousness is mutual, then *A* forms an idea of *B* and *B* forms an idea of *A*. But this is not all. *B* knows that *A* knows *B*, *A* knows that *B* knows *A*; further, *B* knows that *A* knows that he, *B*, knows *A*; and so on. In a word, mutual consciousness is, just as such, a process of communication, the mere logical development of which implies an infinite complexity of intimacy. And this is still not all; for what is perhaps chiefly to be noted is the personal and qualitative change which takes place in both *A* and *B* with every fresh advance towards intimacy.

<sup>3</sup> Yet the abstraction would be worthless if it did not respond fairly to some department of concrete fact. As a matter of fact, men do as a rule transform themselves into economic men when they leave the home for the office. This is the meaning of "business is business."

Again, I have pointed out that consciousness is of a higher degree in proportion as it is clear or distinct. And thus is social consciousness greater in proportion as it is intimately personal. In other words, a mutual consciousness between *A* and *B* can be nothing but a consciousness of personal relation. It is for this reason that I have introduced the contrast between the social relation and the relatively unconscious, relatively impersonal, and likewise relatively distant, economic relation;<sup>4</sup> and the contrast of both with the still more distant relation of the parts of a typewriter—or of twelve persons in the same trolley-car; for it is commonly forgotten that merely to be in the same neighborhood does not constitute a social relation.

Accordingly, I should hold that the social relation is constituted by the fact of consciousness and by that alone. Assume that the tongs and the poker become mutually conscious, or the type-bars and carriage of my typewriter; you would then have a social consciousness. The difficulty lies only in the initial assumption. In the case of men, mutual knowledge is almost necessitated by such facts as the nervous system, the vocal and sense-organs, and the sex structure. This is what Aristotle means by saying that man is a political animal. But, in the end, it is not the correlation of structure, say, between male and female or between your voice and my ears, which makes man a political animal, but our consciousness of this correlation; for that matter, it would be difficult to say what "correlation" would mean in the absence of consciousness of correlation. Assuming the possibility of consciousness, any two objects might form a political relation. And in point of fact we do form political relations with our domestic animals.

Hence, for the formation of a social relation it is not sufficient that there be a consciousness of kind, as Giddings puts it, or, in the words of Tarde, a relation of similarity or of imitation. Consciousness of kind can not bind except as it implies a *mutual* understanding and a social contract. As master of a ship (to repeat an illustration) I shall undertake the rescue of a fisherman who has been carried out to sea, though I shall refuse to take a polar bear from the floating ice—not because the fisherman, like myself, has two legs instead of four, but because I know how he will behave when he comes aboard. Similarity binds nothing. When I cultivate the acquaintance of my fellow man rather than of some inanimate object, it is not because he is like me, but because he can respond to me. Nothing but a madness for joining could induce us to form a national association of those who wear a number eight shoe; and

<sup>4</sup> As suggested in the course of the discussion, the economic man forms a middle term between a person and a thing.

even our philosophical association is less the expression of a common interest than of a mutual interest. All that makes such an association worth while is the *exchange* of ideas; the common interest simply brings those together who will have something to exchange. And if similarity can not bind, neither can imitation. In reading this imitation sociology I am reminded constantly of the social situation in a paper bag where chocolate creams and cream mints lie together on a warm day. I do not deny that the resulting "imitation" is characteristic of a large part of human life. What I deny is that it is characteristic of our conscious life. The imitationists habitually fail to distinguish between blindly following another and consciously following him. A man who buys a motor car only because everybody else has one can not be said to know very clearly what he is doing—certainly no one would offer this as a *reason* for his purchase.<sup>5</sup> So far, the relation of the imitator and the imitated hardly differs from that of the mints and chocolates in the bag. But, if, after a critical examination of my neighbor's hot-water heating apparatus, I conclude that this is just what I need for myself, then my action is not imitation, but the exercise of independent judgment; and in comparing notes with my neighbor and recognizing the worth of his example I form a truly social relation.

So much for the definition of social consciousness. Now for its ethical implications. Of consciousness as such I have said that it is a matter of forming an idea of an object. I wish now to add that it is a matter of forming *your own idea*. Let the object be Bach's "Fantasy and Fugue in G minor." For purposes of illustration I will say that I have formed my own idea of this object, altogether privately, and without taking counsel with musical criticism. Now it may be that musical criticism would tell me that I am wholly wrong. I shall then study the composition again to learn where I am wrong; and if I then see that the composition refuses to respond to my idea I shall reconstruct my idea, or perhaps try another idea, still my own. But the point of the matter is that Bach himself could not absolutely dictate to me how the composition is to be interpreted; for, granting that Bach has successfully embodied his meaning in the structure of the composition, still the question for me is how I shall take it.<sup>6</sup> And I shall, and can, take it only in

<sup>5</sup> This does not mean that one may not have a good reason for conforming to social conventions. For example, a man who thinks that a dress coat is both ugly and silly may very reasonably adopt the custom, on the ground that, in view of the more serious claims upon his attention, the issue is not worth the trouble and inconvenience of a contest. But to adopt the custom upon this ground, or upon any *ground*, is a very different thing from merely doing what others do.

<sup>6</sup> To invent a crucial case—the most strikingly expressive bit of music that I know is a movement entitled "Badinerie" in a suite by Bach. Suppose that,



some form that appeals to me. This, I should hold, is implied in the simple fact of being conscious. As I have pointed out, to be even aware of what is objectively "there" when the composition is being played, I must form an idea of it, that is, make an analysis of its structure. But an idea is not an abstract "entity," to be sent by parcel post, wrapped in a formula of symbolic logic, but an act of personal intelligence. To form an idea of an object is thus to make the object intelligible—to me. But nothing is intelligible to me which does not address itself to my personal point of view and come to terms with my own evaluations and appreciations. Even the first law of motion would be unintelligible if I could not personally appreciate the reasonableness of not setting out upon a journey, or of not terminating a journey already begun, unless there were an object in doing so. In one word, that which I am to know must be "communicated" to me, and nothing will be communicated to which I do not respond.

On the other hand, nothing will be communicated if the object fails to respond to me. And thus I should say that all consciousness is in some degree, remote as you please, a social process—not in the sense in which nature and science are matters of convention between man and man, but in the truer sense, as I conceive it, in which knowledge of nature is a matter of coming to terms with nature just as knowledge of man is a matter of coming to terms with your fellow-man. I regret that time will not permit me to develop the analogy; but there is one point to be noted here which is of central importance. If you will study the interactions between the scientist and his facts, I think you will find it difficult to say where the process of establishing a law differs from that of concluding a bargain. Does the scientist's hypothesis determine the facts? Or do the facts determine the hypothesis? What we seem to find is that neither is authoritative over the other, and that, while at each step one of the two terms responds to the other—hypotheses call out facts and facts develop the meaning of hypotheses—each in responding makes a further demand upon the other. Yet all the while the scientist and his facts do come to terms—and how? This is the important question, and the answer is to be found in the meaning of consciousness. If the knower and the object were fixed material quantities, like the key and the lock, then it must be a matter of chance whether the key will fit the lock, whether the knower can know the object or have anything to do with it. But the conscious agent unlocks his world, not by being merely a certain form of key which happens to fit the world, but by forming his idea of the world. And this means that in a spirit of "badinerie" Bach had entitled this movement "*Marche Funebre*"—should we bow to his authority?

the object, or world, is *made over* in terms of his idea. So far as you are conscious of an object—so far as you have the merest impression of it, you never take the object just as it is presented. Indeed, what an object would be as merely “presented” I can not conceive. At any rate, just the fact that you are conscious of an object—this fact, without any extraneous additions, means that the object is so far reconstructed, or made over, to show its bearing upon your purposes and how it may be dealt with from your point of view. And in this fact, I say, lies the possibility—so far as you are conscious—of coming to terms, not merely with an object for which you happen to be fitted, but with any object.

For our main purpose, however, two points are to be emphasized: first, that any process of consciousness involves both the assertion of yourself and the recognition of an object, or “other”; secondly, that these features vary in parallel order with the degree of consciousness. Do I derive only a vague impression from Bach’s “Fugue”? Then I am myself vague, at least musically vague. Is my interpretation of the “Fugue” very definite and clear? Then my grasp of the objective reality is equally clear.

Now, in social consciousness proper, the only difference is that here your object, or “other,” is one with whom you are in distinct communication. This is indeed a big difference, and the consequences of the difference are momentous for any theory of human relations. But, according to my view, it is in no sense a difference in kind.<sup>7</sup> The pilot of an approaching steamboat whistles to me twice to say that he will turn to port and wishes me to do the same. Nature piles up a heavy sea to suggest that I would better not go out to-day. As a matter of logic, the only difference is that, if I wish to propose a better arrangement, I can more easily and quickly come to terms with the pilot than with nature. But in both cases I propose to look at the matter from the standpoint of my own interests; yet in both cases I shall be obliged to consider the object.

We have now to note briefly the implications of this analysis for moral obligation. First, then, the aspect of self-interest, or self-assertion. In the matter of becoming conscious of Bach’s “Fugue,” I have just pointed out that, while it is all to my interest to listen carefully to the succession of notes and to consult every intelligent

<sup>7</sup> To appreciate the gradational character of the difference, we should recall the position of the economic man as the middle term between the person and the thing; or the man whom you know merely as a unit in a table of statistics, or as a unit of population. To you such a unit is not much more human than any other unit. And if the intimacy of your communication with your friend is significant for the character of the relation, no less significant must be the lack of communication between the members of large groups for any statement of the situation in society as a whole.

musical opinion, yet in the end, as a self-conscious agent, I can accept no interpretation which does not express the meaning of the composition for me. Just so, in the matter of moral obligation, for me as a self-conscious agent the final question is not what satisfies you, or what satisfies nature, or society, or what satisfies God, but what satisfies me. I can think of no better illustration here than that afforded by the sex-instinct. For at no point in our lives is the contrast so clear between the apparent intentions of nature—between the impulses as “presented”—and the point of view of those directly concerned. Nature makes the sex-instinct imperious so as to furnish abundant material for the misery of natural selection; and from the standpoint of nature, not only the sex-function, but even the sex-consciousness, is only a means to an end. Yet nothing is clearer than the fact that, just so far as men become self-conscious with regard to the sex-relation, their first consideration is, not what it means for nature, but what it means for themselves; and for each the question is, not what it means for society, but what it means for me. And on the other hand, eugenics to the contrary, nothing is a clearer mark of culture and of refined humanity than the extent to which the sex-relation is regarded as personal and sacred. So of the parental relation. Not long ago I heard a parent sincerely congratulated upon contributing several fine children to the uses of society. Yet, merely for the benefit of society, which of us would undertake the care and education of even one child? In terms of taxation, which of us would not regard it as an intolerable burden? And on the other hand which of us proposes to admit this point of view with regard to his own child? Yet for none of us is it a matter of small consequence that our children become useful members of society. The point is that, granting the interest of society or of nature in the child, for the parent who is conscious of the parental relation—and this applies almost exclusively to the human parent—the child is first of all his own.

We come, then, to the second aspect of the social relation, the recognition of the “other.” In a recent work on social psychology the writer, in the text, condemns the conception of “the isolated individual” and in a footnote cites me as a horrible example. But I have not once suggested an isolated individual; nor, I may add, a denatured individual. What I stand for is an independent individual; and how an individual can win independence in an empty world I can not conceive. But an individual can win independence in a world of which he is conscious; and a greater independence in a world which contains other conscious beings who also seek independence. Consciousness, as I have pointed out, is a matter of making things over. If this were not the case it would make no



difference that the pilot of the approaching steamboat signals his intentions; neither he nor I could do aught but "recognize the facts." If consciousness were not a matter of making things over, all society would present an irremediable conflict of interests. Society would then be a harbor full of steamboats where the signals made no difference. But then it is hard to see how any individual could be interested in learning the other's purposes or why he should even care to define his own. But if consciousness does indeed consist in making things over, then, in the mere consciousness of your relation to your fellow—in the mere perception of the possibilities of mutual service and advantage—you have both the power to realize your own freedom and the obligation to respect the freedom of your neighbor. In a word, the very consciousness which creates any obligation creates also the power, and thus the obligation, of realizing *individual ends*.

It seems to me, therefore, that our steamboat illustration contains all the elements of social obligation. At the same time it must be remembered that for purposes of clearness we are dealing with a social relation of a very elementary, and thus of a very distant, kind. Hence, if you object that the illustration makes the social relation a very cold-blooded affair—utilitarian, unsympathetic, and unmoral—I shall point out that at this stage the social relation is in fact, relatively speaking, of this character (like the economic relation), just because the mutual knowledge covers so few points. Conceive, however, that the other person is your wife, your son, your best friend, in relation to whom you guide, not only your boat, but a large part of your life; then you may see that, though the logic of social and moral obligation remains the same, yet in the very intimacy and comprehensiveness of the adjustment you have all that is implied in a true sympathy and a compelling loyalty. This I take to be the meaning of social unity. A *social* unity is not the unity of the mints and the chocolates in the bag, nor the unity of the pigs in the barnyard, huddled together on a cold day, but a unity appropriate to the nature of conscious and intelligent persons. And for conscious persons there can be no truer or higher form of unity than the unity of a perfect understanding.

Such, then, is the meaning, as I conceive it, of social consciousness. Social consciousness is the mutual consciousness of individual persons; social obligation is a personal obligation created by the consciousness of personal relation; and both are greater or less in degree according as the mutual consciousness is distinct. Hence, no obligation is implied in a community of biological species; and little is implied in a merely vague, impersonal, and impressionistic "common good." For obligation is not common, but mutual; and it is

binding so far as it is distinct. Yet I would not say that there is any man within your ken towards whom your obligation is *nil*. What I mean is that no creature is your brother just because he is one of the human race. He is your brother, or your cousin, first, second, or third, as the case may be, just so far as mutual understanding may be regarded as an actual, or a reasonably attainable, fact.

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INDIANA UNIVERSITY.

### THE SOCIAL SELF<sup>1</sup>

RECOGNIZING that the self can not appear in consciousness as an "I," that it is always an object, *i. e.*, a "me," I wish to suggest an answer to the question, What is involved in the self being an object? The first answer may be that an object involves a subject. Stated in other words, that a "me" is inconceivable without an "I." And to this reply must be made that such an "I" is a pre-supposition, but never a presentation of conscious experience, for the moment it is presented it has passed into the objective case, presuming, if you like, an "I" that observes—but an "I" that can disclose himself only by ceasing to be the subject for whom the object "me" exists. It is, of course, not the Hegelism of a self that becomes another to himself in which I am interested, but the nature of the self as revealed by introspection and subject to our factual analysis. This analysis does reveal, then, in a memory process an attitude of observing oneself in which both the observer and the observed appear. To be concrete, one remembers asking himself how he could undertake to do this, that, or the other, chiding himself for his shortcomings or pluming himself upon his achievements. Thus, in the redintegrated self of the moment passed, one finds both a subject and an object, but it is a subject that is now an object of observation, and has the same nature as the object self whom we present as in intercourse with those about us. In quite the same fashion we remember the questions, admonitions, and approvals addressed to our fellows. But the subject attitude which we instinctively take can be presented only as something experienced—as we can be conscious of our acts only through the sensory processes set up after the act has begun.

The contents of this presented subject, who thus has become an object in being presented, but which still distinguish him as the subject of the passed experience from the "me" whom he addressed,

<sup>1</sup> Read at the Annual Meeting of the Western Philosophical Association, March, 1913.

are those images which initiated the conversation and the motor sensations which accompany the expression, plus the organic sensations and the response of the whole system to the activity initiated. In a word, just those contents which go to make up the self which is distinguished from the others whom he addresses. The self appearing as "I" is the memory image of the self who acted toward himself and is the same self who acts toward other selves.

On the other hand, the stuff that goes to make up the "me" whom the "I" addresses and whom he observes, is the experience which is induced by this action of the "I." If the "I" speaks, the "me" hears. If the "I" strikes, the "me" feels the blow. Here again the "me" consciousness is of the same character as that which arises from the action of the other upon him. That is, it is only as the individual finds himself acting with reference to himself as he acts towards others, that he becomes a subject to himself rather than an object, and only as he is affected by his own social conduct in the manner in which he is affected by that of others, that he becomes an object to his own social conduct.

The differences in our memory presentations of the "I" and the "me" are those of the memory images of the initiated social conduct and those of the sensory responses thereto.

It is needless, in view of the analysis of Baldwin, of Royce and of Cooley and many others, to do more than indicate that these reactions arise earlier in our social conduct with others than in introspective self-consciousness, *i. e.*, that the infant consciously calls the attention of others before he calls his own attention by affecting himself and that he is consciously affected by others before he is conscious of being affected by himself.

The "I" of introspection is the self which enters into social relations with other selves. It is not the "I" that is implied in the fact that one presents himself as a "me." And the "me" of introspection is the same "me" that is the object of the social conduct of others. One presents himself as acting toward others—in this presentation he is presented in indirect discourse as the subject of the action and is still an object,—and the subject of this presentation can never appear immediately in conscious experience. It is the same self who is presented as observing himself, and he affects himself just in so far and only in so far as he can address himself by the means of social stimulation which affect others. The "me" whom he addresses is the "me," therefore, that is similarly affected by the social conduct of those about him.

This statement of the introspective situation, however, seems to overlook a more or less constant feature of our consciousness, and



that is that running current of awareness of what we do which is distinguishable from the consciousness of the field of stimulation, whether that field be without or within. It is this "awareness" which has led many to assume that it is the nature of the self to be conscious both of subject and of object—to be subject of action toward an object world and at the same time to be directly conscious of this subject as subject,—“Thinking its non-existence along with whatever else it thinks.” Now, as Professor James pointed out, this consciousness is more logically conceived of as sciousness—the thinker being an implication rather than a content, while the “me” is but a bit of object content within the stream of sciousness. However, this logical statement does not do justice to the findings of consciousness. Besides the actual stimulations and responses and the memory images of these, within which lie perforce the organic sensations and responses which make up the “me,” there accompanies a large part of our conscious experience, indeed all that we call self-conscious, an inner response to what we may be doing, saying, or thinking. At the back of our heads we are a large part of the time more or less clearly conscious of our own replies to the remarks made to others, of innervations which would lead to attitudes and gestures answering our gestures and attitudes towards others.

The observer who accompanies all our self-conscious conduct is then not the actual “I” who is responsible for the conduct in *propria persona*—he is rather the response which one makes to his own conduct. The confusion of this response of ours, following upon our social stimulations of others with the implied subject of our action, is the psychological ground for the assumption that the self can be directly conscious of itself as acting and acted upon. The actual situation is this: The self acts with reference to others and is immediately conscious of the objects about it. In memory it also red-integrates the self acting as well as the others acted upon. But besides these contents, the action with reference to the others calls out responses in the individual himself—there is then another “me” criticizing, approving, and suggesting, and consciously planning, *i. e., the reflective self*.

It is not to all our conduct toward the objective world that we thus respond. Where we are intensely preoccupied with the objective world, this accompanying awareness disappears. We have to recall the experience to become aware that we have been involved as selves, to produce the self-consciousness which is a constituent part of a large part of our experience. As I have indicated elsewhere, the mechanism for this reply to our own social stimulation of others follows as a natural result from the fact that the very sounds, ges-

tures, especially vocal gestures, which man makes in addressing others, call out or tend to call out responses from himself. He can not hear himself speak without assuming in a measure the attitude which he would have assumed if he had been addressed in the same words by others. Kant

The self which consciously stands over against other selves thus becomes an object, an other to himself, through the very fact that he hears himself talk, and replies. The mechanism of introspection is therefore given in the social attitude which man necessarily assumes toward himself, and the mechanism of thought, in so far as thought uses symbols which are used in social intercourse, is but an inner conversation.

Now it is just this combination of the remembered self which acts and exists over against other selves with the inner response to his action which is essential to the self-conscious ego—the self in the full meaning of the term—although neither phase of self-consciousness, in so far as it appears as an object of our experience, is a subject.

It is also to be noted that this response to the social conduct of the self may be in the rôle of another—we present his arguments in imagination and do it with his intonations and gestures and even perhaps with his facial expression. In this way we play the rôles of all our group; indeed, it is only in so far as we do this that they become part of our social environment—to be aware of another self as a self implies that we have played his rôle or that of another with whose type we identify him for purposes of intercourse. The inner response to our reaction to others is therefore as varied as is our social environment. Not that we assume the rôles of others toward ourselves because we are subject to a mere imitative instinct, but because in responding to ourselves we are in the nature of the case taking the attitude of another than the self that is directly acting, and into this reaction there naturally flows the memory images of the responses of those about us, the memory images of those responses of others which were in answer to like actions. Thus the child can think about his conduct as good or bad only as he reacts to his own acts in the remembered words of his parents. Until this process has been developed into the abstract process of thought, self-consciousness remains dramatic, and the self which is a fusion of the remembered actor and this accompanying chorus is somewhat loosely organized and very clearly social. Later the inner stage changes into the forum and workshop of thought. The features and intonations of the *dramatis personæ* fade out and the emphasis falls upon the meaning of the inner speech, the imagery becomes merely the barely necessary

cit<sup>t</sup> But the mechanism remains social, and at any moment the process may become personal.

It is fair to say that the modern western world has lately done much of its thinking in the form of the novel, while earlier the drama was a more effective but equally social mechanism of self-consciousness. And, in passing, I may refer to that need of filling out the bare spokesman of abstract thought, which even the most abstruse thinker feels, in seeking his audience. The import of this for religious self-consciousness is obvious.

There is one further implication of this nature of the self to which I wish to call attention. It is the manner of its reconstruction. I wish especially to refer to it, because the point is of importance in the psychology of ethics.

As a mere organization of habit the self is not self-conscious. It is this self which we refer to as character. When, however, an essential problem appears, there is some disintegration in this organization, and different tendencies appear in reflective thought as different voices in conflict with each other. In a sense the old self has disintegrated, and out of the moral process a new self arises. The specific question I wish to ask is whether the new self appears together with the new object or end. There is of course a reciprocal relation between the self and its object, the one implies the other and the interests and evaluations of the self answer exactly to the content and values of the object. On the other hand, the consciousness of the new object, its values and meaning, seems to come earlier to consciousness than the new self that answers to the new object.

The man who has come to realize a new human value is more immediately aware of the new object in his conduct than of himself and his manner of reaction to it. This is due to the fact to which reference has already been made, that direct attention goes first to the object. When the self becomes an object, it appears in memory, and the attitude which it implies<sup>t</sup> has already been taken. In fact, to distract attention from the object to the self implies just that lack of objectivity which we criticize not only in the moral agent, but in the scientist.

Assuming as I do the essentially social character of the ethical end, we find in moral reflection a conflict in which certain values find a spokesman in the old self or a dominant part of the old self, while other values answering to other tendencies and impulses arise in opposition and find other spokesmen to present their cases. To leave the field to the values represented by the old self is exactly what we term selfishness. The justification for the term is found in the habitual character of conduct with reference to these values. Attention is not



claimed by the object and shifts to the subjective field where the affective responses are identified with the old self. The result is that we state the other conflicting ends in subjective terms of other selves and the moral problem seems to take on the form of the sacrifice either of the self or of the others.

Where, however, the problem is objectively considered, although the conflict is a social one, it should not resolve itself into a struggle between selves, but into such a reconstruction of the situation that different and enlarged and more adequate personalities may emerge. Attention should be centered on the objective social field.

In the reflective analysis, the old self should enter upon the same terms with the selves whose rôles are assumed, and the test of the reconstruction is found in the fact that all the personal interests are adequately recognized in a new social situation. The new self that answers to this new situation can appear in consciousness only after this new situation has been realized and accepted. The new self can not enter into the field as the determining factor because he is consciously present only after the new end has been formulated and accepted. The old self may enter only as an element over against the other personal interests involved. If he is the dominant factor it must be in defiance of the other selves whose interests are at stake. As the old self he is defined by his conflict with the others that assert themselves in his reflective analysis.

Solution is reached by the construction of a new world harmonizing the conflicting interests into which enters the new self.

The process is in its logic identical with the abandonment of the old theory with which the scientist has identified himself, his refusal to grant this old attitude any further weight than may be given to the other conflicting observations and hypotheses. Only when a successful hypothesis, which overcomes the conflicts, has been formulated and accepted, may the scientist again identify himself with this hypothesis as his own, and maintain it *contra mundum*. He may not state the scientific problem and solution in terms of his old personality. He may name his new hypothesis after himself and realize his enlarged scientific personality in its triumph.

The fundamental difference between the scientific and moral solution of a problem lies in the fact that the moral problem deals with concrete personal interests, in which the whole self is reconstructed in its relation to the other selves whose relations are essential to its personality.

The growth of the self arises out of a partial disintegration,—the appearance of the different interests in the forum of reflection, the

reconstruction of the social world, and the consequent appearance of the new self that answers to the new object.

GEORGE H. MEAD.

THE UNIVERSITY OF CHICAGO.

## SOCIETIES

### NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences, on Monday, April 28, at Columbia University. From the point of view of attendance and general interest, the session was one of the most successful held in recent years. Members of the New York Branch dined at the Faculty Club between the afternoon and evening sessions, and attended a smoker at the Faculty Club after the evening programme. The following officers were elected for the ensuing year: Chairman of the New York Branch, Professor Wendell T. Bush; Secretary-Treasurer, Dr. H. L. Hollingworth. The following papers were presented:

*Families of American Men of Science:*<sup>1</sup> J. McKEEN CATTELL.

*A Comparison of the Records of the Criminal Woman and the Working Child in a Series of Mental Tests:*<sup>2</sup> CLARA JEAN WEIDENSALL.

*The Mentality of Boys in the New York Probationary School—Public School 120—as determined by the Binet-Simon Tests:* A. E. REJALL.

The New York City Probationary School, formerly Public School 120, located on the "Lower East Side" of Manhattan, became in 1905 a school for the detention and care of incorrigible boys in New York City. Boys attending this school constitute as a class a rough, rebellious, uncontrollable group, and are sent to the school for the following reasons given in order of their frequency: truancy, insubordination, theft, immorality, and violation of the Child Labor Law.

During the period October, 1912, to April, 1913, 103 of the 120 boys which the school normally accommodates were tested by the 1911 Revised Binet-Simon Scale, with the following results: 10 per

<sup>1</sup> This paper was a partial report of an extended investigation which is to be presented in full in forthcoming numbers of *Science*.

<sup>2</sup> Abstract not furnished.

cent. were of normal intelligence, 70 per cent. were from one to four years backward, and 20 per cent. were distinctly feeble-minded, being from four to six years behind. The average chronological age was thirteen years and ten months, and the average age retardation per pupil was two and one half years.

These results reinforce the conclusions of others who have used the Binet-Simon Tests on incorrigibles, that mental deficiency is at least an accompaniment and possibly a cause of incorrigibility.

*Some Individual Differences in Immediate Memory Span:* GEO. F. WILLIAMSON.

The writer experimentally tested 31 males and 69 females—in all, 100 subjects. “The ‘memory span’ is the largest amount of any given material which can always be correctly reproduced immediately after one presentation.”<sup>3</sup> The writer has hoped to throw some light on individual and sex differences in immediate memory span.

The materials used were letters (consonants) and figures of one place. The subjects were told what constituted the immediate memory span, and informed that the presentations would be of a gradually expanding series. From time to time, the number of elements in any given “series-presentation” was mentioned by the experimenter. To avoid rhythm, letters and figures were pronounced in a loud tone of voice, to the beats of a metronome—one a second. The subjects listened until the completion of the reading of any *one* series, and then immediately wrote down, in the proper order, what they had heard. Another set was then presented. The test began with a series of six letters, then one of seven was pronounced, one of eight, and finally a series of nine letters. Next another series of six letters was read, then one of seven, one of eight, and again one of nine. Subjects recorded after each “set-presentation.” Having completed the eight sets of letters, the eight series of figures were given in exactly the same manner. Credit was given for series correctly reproduced in the proper order. Each individual was credited with the *highest number* of letters or figures that he reproduced correctly every time that many were given him. This was taken as his Immediate Memory Span.

With increase in series length, passing from six-series to nine-series, there is a steady increase in the average number of *mistakes* per individual, and in the average deviation (excepting in the nine-series, where the A.D. is less than in the eight-series). This is practically the case, when (on a per cent. basis) we consider the sexes separately. With series of *all* lengths, we have an average number

<sup>3</sup>Ladd and Woodworth, “Physiological Psychology,” page 574.



of mistakes for letters of 5.72, with an A.D. of 2.24; while for figures it is only 3.93, but with a greater A.D. of 2.39. When we here consider the sexes separately, we have the same greater number of mistakes for letters, and decidedly greater variability for figures. For both letters and figures, with series of *all* lengths, there is a grand average number of mistakes of 4.83, with an A.D. of 2.32. From the point of view of the sexes, the same relation holds. However, with all the series, in both letters and figures, the women make more mistakes than the men (Av., women, 4.96, men, 4.50). But the men are more variable than the women (A.D., men, 2.41, women, 2.22).

The following table gives the facts for the Immediate Memory Span.

IMMEDIATE MEMORY SPAN—100 SUBJECTS

		Letters		Figures		Grand av.	
Mode		6.0		6.0		6.0	
Av.		5.69		6.47		6.08	
A.D.		0.59		0.92		0.76	
S.D.		0.73		1.09		0.91	
		Men	Women	Men	Women	Men	Women
On per cent. basis.	Mode	5.0	6.0	7.0	6.0	6.0	6.0
	Av.	5.58	5.74	6.76	6.36	6.17	6.05
	A.D.	0.60	0.58	0.89	0.87	0.75	0.73

Using the Pearson Coefficient, the writer correlated the memory spans of the 100 subjects for letters and for figures.  $r = +.26$  (only), with a P.E. of .06. For the 31 men alone,  $r = +.31$ , with a P.E. of .10. For the 69 women,  $r = +.27$ , with a P.E. of .07.

*The Order of Merit Method and the Method of Paired Comparisons:*  
MABEL BARRETT.

In this experiment, the order of merit method and the method of paired comparisons were applied to three series of materials involving judgments of varying subjectivity. The three series consisted of (1) weights, to be judged with respect to their heaviness, (2) specimens of handwriting, to be judged with respect to their excellence, and (3) propositions of varying validity, to be judged with respect to the subject's degree of belief in the fact stated.

The results were used as data by which to compare the relative efficiency of the two methods with regard to statistical investigation of judgment. Seven main problems are suggested, each of which involves a basis of comparison between the two methods.

I. The variability of each specimen in the series from the average position accorded to that specimen, and the consequent average

variability of the series. In the case of weights, this average variability is, by the order of merit method, slightly greater than by the paired comparisons method, and in handwriting judgments the exact opposite is true. These averages in isolation might indicate that the one method is particularly favorable to judgment of weight, the other to judgment of handwriting—or the one method to the one group of subjects, and the other method to the other group. These hypotheses are, however, invalidated by the exceedingly high correlation between the two methods for any one type of judgment, and by a comparison of the variabilities in handwriting and beliefs, where the judgments were performed by the same group of subjects. The average of these variabilities for the three types of judgment shows a difference of only .02 between the two methods. The differences in isolated cases may be due to the materials themselves or to the groups themselves apart from any consideration of method. They are very evidently *not* due to the *methods*.

II. The second problem is the correlation of the average order with the objective order of the series, by the two methods. In judgment of weights this correlation is exactly the same, and in handwriting *almost* exactly the same for one method as for the other. The difference in the latter case is only .003. In the case of beliefs there is no objective order.

III. The correlation between the arrangements of a given series by the one method and by the other averages .987 for the three types. This indicates that it is unnecessary to employ either one of these methods, which for any reason is less to be preferred, if we consider them with respect to the general results obtained by both.

IV. The individuals of the group correlate as well with their average in the one method as in the other. The differences between the average correlations by the two methods lie in every case within the limits of the probable error.

V. An individual who stands high in correlation with the group arrangement by one method also tends to stand high in that correlation by the other method. This relation is expressed by the correlation  $+.72$  in the case of handwriting and beliefs. In the case of weights, the relation is a random one,  $+.01$ . The individual differences in correlation with the average, are, by the paired comparisons method, so insignificant as to make the *order* of correlations subject to chance and very unreliable.

VI. The order of merit method shows a random relation ( $-.01$ ) between an individual's judgment of handwriting and the same individual's judgment of beliefs. This result accords with the results obtained by other investigations of this sort of problem. In the paired comparisons method this correlation is expressed by  $-.35$ .

This represents the first and only discrepancy between the equal efficiency of the two methods in this experiment.

VII. A comparison of the groups which performed the one method first with the groups which performed the other method first shows that the method which is employed first does not tend in any way to improve the judgments made by the method which follows it a month later.

On the basis of the efficiency of the two methods for statistical investigation of judgment we may conclude that the one method is in no way to be preferred to the other. From the point of view of convenience, labor, and time required, the order of merit method is by far the more satisfactory of the two.

*Effect of Size and Frequency on Permanence of Impression:* E. K. STRONG, JR.

In an experimental study continued for some five months considerable information was obtained which throws light upon the statement that in advertising "small space in many media is better than large space in few media." Two points of interest to the psychologist were discussed in the present paper: (1) how does an increase in the size of an advertisement (increase of vividness) affect the permanency of impression made upon the reader? and (2) how does continued repetition of a firm's advertisements affect this permanency of impression?

When the presentations occurred one month apart and the impression was tested one month later by the recognition-test, it was found: (1) that the value of space increases approximately as the square-root of the increase in area, and not directly with the increase in area, and (2) that in this particular case the value of repetition increased exactly as the cube-root of the number of presentations.

*The Effects of Strychnine on Mental and Motor Efficiency:* A. T. POFFENBERGER, JR.

The investigation was undertaken to determine the effect of ordinary medicinal doses of strychnine on mental and motor processes, and to provide material for a comparative study of the effects of strychnine and caffeine on these processes.

Two subjects were experimented on for a period of thirty days. The test periods were: 9:30 A.M., 1:30, 3:30, and 5:30 P.M.; and for one of the subjects, an additional test at 8:30 P.M. The tests used were as follows: steadiness test, three-hole test, and tapping test, as measures of motor efficiency; and the color-naming test, opposites



test, cancellation test, addition test, and multiplication test, as measures of mental efficiency. The motor tests are well known and need no description. The color-naming, opposites, and cancellation tests are described by Woodworth and Wells in their monograph on Association Tests. The addition test required the addition of 17 to each of 50 two-place numbers, and the multiplication test required the multiplication of each of 25 two-place numbers by 7.

The strychnine was given in capsule form, in doses of 1/30 grain during the first week and 1/20 grain during the rest of the period. Each day at 2:45 a capsule was taken, and whether it was a strychnine capsule or only a sugar capsule, the subjects did not know. The schedule was so arranged that in the four weeks about all the combinations of doses were obtained which had been used in the caffeine tests with the 16 subjects. At the end of the four-weeks' period, a two-day intensive study was made, in which tests were begun at 8:30 A.M. and repeated every half hour, until 8:30 P.M. with the exception of two periods for lunch and dinner. In these two days the capsule was taken at 1:45 P.M. A daily introspective report was required from each subject, in which he recorded his physical condition, etc.

Although the dose was as large as that given in practise, no consistent physical symptoms were noted, such as disturbances of sleep, restlessness, etc., such as were common in the caffeine reports. The curves constructed from the daily tests, and those from the combination of the whole four weeks for separate test periods, show neither an increase in efficiency nor a following period of decreased efficiency, although relapse after stimulation is given as one of the common characteristics of the action of strychnine. The results of the two-day intensive study do not differ from the preceding tests.

There are two possible conclusions to be drawn from the work at this stage. First, the two subjects studied may, by chance, not be susceptible to the action of strychnine except in very large doses. This possibility will be tested by further work with a number of subjects. Secondly, since strychnine acts predominantly on the lower centers of the central nervous system, those in the cord and medulla, the mental processes studied should not be affected. Also, the only effect on motor activity would be a delay of the onset of fatigue by artificially keeping up the tonus of the muscles, a factor which would not enter into the motor tests as they were conducted. The writer inclines to the latter view.

H. L. HOLLINGWORTH,  
*Secretary.*

## REVIEWS AND ABSTRACTS OF LITERATURE

*Brief History of Modern Philosophy.* HAROLD HÖFFDING. Translated by C. F. SANDERS. New York: The Macmillan Company. 1912. Pp. 324.

Professor Harold Höffding belongs to the modern school of "critical monists" and Professor Sanders says in his introduction "he is thoroughly modern in his antipathy toward metaphysical speculation." This attitude of the author appears in the novel composition of this "Brief History of Modern Philosophy" and explains the remarkable attempt to balance the past by the present. The book has about three hundred pages. One hundred pages, or about one third of the book, are devoted to the miscellaneous philosophies of the nineteenth and twentieth centuries. At the end of the book there is a chronological list of names of modern philosophers which is five and a half pages long. Two of these pages are taken up with nineteenth and twentieth century names. Now such a balance almost gives us a history of our times with past philosophy served up as an introduction. Of course, if one goes into the mathematics of the matter, one must acknowledge that history does include last week, yesterday, and even the minute just past; and that the history of philosophy is not complete unless it includes everybody. But completeness is not the only nor, indeed, the most important end of written history. Perspective, for example, is far more important. It is daring for any one—even for so profound a scholar as Professor Höffding—to attempt to throw the present into the same scale with the past. It is doubtful if any evaluation of present philosophy later than Darwin is worth while. Moreover, to some historians the nineteenth century, so far as its philosophy is concerned, looks like a kind of vermiform appendix newly attached to history—often a nuisance and at any rate of little use. Yet in this book in the same coordinate list stand the names of Cohen, Paulsen, James, Bergson, Rickert, and Avenarius, with those of the canonized Descartes, Spinoza, Kant, Hegel, and Schopenhauer. This is preposterous, even from the author's point of view of dislike for metaphysical speculation. Professor Höffding may agree with Bacon that we, and not the early thinkers, are the ancients. However, Bacon meant that we are the ancients only so far as we embody and transcend antiquity. And who is to decide this? Certainly not a modern writer who from the list modestly omits his own name, and also that of Professor Josiah Royce, who does not belong to the same school. Time alone can decide; it decides sometimes fairly and sometimes unfairly; but it nevertheless is the final arbiter. If Professor Höffding is a disciple of the "modern movement," its disciples have undertaken to relieve time of its most important function. In any case this is an unfortunate feature in a text-book for students. The American student is sufficiently imbued with the so-called "modern spirit." If there is one impression more important than all others that an American student should receive, it is the *historical*. Above everything else he should get a *recognition of perspective*. The history of philosophy is one of the most important subjects in the curriculum to teach him the value of the historical.

Professor Sander's translation of Dr. Höffding's "Brief History of Modern Philosophy" will find a place in libraries of philosophical students. There is always room for a book that has the deliberate purpose of presenting the historical material in a clearer and more inviting form; and in this book we have the traditional material in order and compactness. Dr. Höffding has the genius for compactness. In all his writings his orderliness is military. He can not write except in a style that is at once condensed and comprehensive. His "Problems of Philosophy," the translation of which was brought about by William James as the best possible presentation of critical monism, is a model for conciseness. But it is so concise, it is almost unreadable, except to those thoroughly acquainted with its allusions.

This "Brief History of Modern Philosophy" is from the same mint. The reader feels that he is in the hands of a master of material. Any single philosopher is under the discipline of the expounder. The discussion sails under bare poles, but is nevertheless in absolute control. The naturally crabbed diction of the author, which the translator has done his best to overcome, is to some degree obviated by the forcefulness of the exposition. The beginner in the history of philosophy must not expect to be invited in this book to the study of past philosophies by the seductions of an imaginative historian. Professor Höffding has little historical imagination. There is little exposition of philosophical relations, no tracing of influences. In Professor Höffding's larger two-volume edition of the "History of Modern Philosophy," of which this book is an abridgment, he writes at times as if he were to place the historical material upon a true historical basis by showing the relation of the history of thought to the history of affairs—to politics, economics, literature, etc. But he is even there never quite successful. He fails in the essential quality that makes Windelband great in his "Geschichte der neueren Philosophie," and which Erdmann shows in such expositions as that of the Encyclopædists. Dr. Höffding's effort in this direction seems to thwart itself, and in this briefer book one finds few traces of it. The book is a reliable guide-book. It has just as much and just as little value as any reliable guide-book has, in depicting the country through which you are to pass. Here are some examples. Dr. Höffding gives a faithful dissection of the philosophy of John Locke. Yet after reading it, one would have no conception of the magnificent greatness of Locke in Locke's influence on the French Revolution through Voltaire and Montesquieu, and upon early politics and thought in the United States. There is also a true exposition of the philosophy of Leibnitz, but it does not occur to the author to tell the reader that, while Leibnitz is the finisher of the rationalistic philosophy, he participated in the individualism of the enlightenment, as is shown in his "Correspondence" with Clarke and Bayle, his "Theodicy," and his "New Essays." Dr. Höffding properly devotes much space to Galileo and to Rousseau, but the reader is left to judge for himself why he does so.

In general the usefulness of future text-books in the history of philosophy will be pedagogical. The general body of philosophical material



is pretty well settled, so far as text-book writing is concerned. There are, to be sure, philosophies like that of Spinoza which are open to a great variety of interpretation; but about every possible interpretation has already been made. There are comprehensive philosophies, like that of Kant, from which there will be space in a text-book only for a selection. There are, too, a great cloud of philosophies which hover on the horizon. Sometimes one, sometimes another, of these will seem to the text-book writer of sufficient importance to name. Allowing for this variety of interpretations and selections, the body of historical doctrine and the calendar of philosophical saints is fixed. Yet the opportunity is now and always will be very great for each generation to re-present this historical-philosophical material to its students, just as each generation has had to re-translate the classics for itself.

H. E. CUSHMAN.

GRENOBLE, FRANCE.

*Genetic Philosophy of Education.* G. E. PARTRIDGE. New York: Sturgis and Walton. 1912. Pp. 401.

It is a well-deserved tribute to the importance of the writings of President G. Stanley Hall which Dr. Partridge offers by preparing this useful compendium of his educational philosophy. Formidable in their collective array, and individually in the two works on "Adolescence" and "Educational Problems" of 1,400 pages each, formidable also in the manner of their presentation and the machinery of argumentative reinforcement through such varied disciplines, the writings stand in need of a summary which shall at once be a digest and a reconstruction. In both respects the volume is singularly apposite and represents a care and quality of effort not commonly expended in altruistic service of this nature. The significant issue of the reduction and recomposition—not unlike a model of the university campus which reveals the correlation of the several buildings far better than a stroll among them can do—is to provide a critical view of the whole.

The application of the Darwinian concepts to the practical regulation of life at once gave to education all the cumulative significance that the term environment thus acquired. It likewise provided a clue in the environment which nature had provided for the unfoldment of powers which by definition education was to direct; it provided an ancestral lineage as well as a far-reaching biological import. As the spokesman of this view, as a keen and ardent student of its many-sided evidence, as an interpreter of its detailed import, President Hall has achieved an undisputed leadership. The sense of the unity of purpose, as well as the concentrated mobilization of forces for the campaign, appear in the survey. That the undertaking was and is of large significance, that it represents an approach to educational problems that will never recede from the consciousness of students, has been made clear. Naturally, upon the correctness of the details, the symmetry of the construction, the pertinence of the design, the value from this or that interest of the deductions drawn, and the policies favored, there will be a large difference of opinion.

The genetic philosophy of education is an outcome of the genetic psychology of the educative processes, and that in turn of the correct interpretation of the genesis of the mental life from the records which biology has preserved. The two aspects of this which are fundamental are not quite coordinate. The first is the larger and more largely shared view—is indeed an integral part of the genetic conception—that our traits and trends, our impulses and modes of behavior, are adaptations to older conditions; that many of the desirable and undesirable tendencies of present-day human nature are explicable only in terms of an original nature; all of which is important for the interpretation and guidance of practical problems. It is equally conceded that the path of unfoldment through which childhood takes us affords an intimate and a retrospectively significant view of the evolutionary relations involved. But the detailed interpretation of these facts and inferences presents no such general agreement. Just how far the original nature of man now repeats itself in detailed trends or only in general favorings and sections is far from certain. Particularly uncertain is the recapitulation theory upon which President Hall stakes so many of his conclusions; this implies not only that the plot or its general motive is recapitulated, but that the scenes and rôles repeat themselves and leave deposits of tendencies ever to be reckoned with. That this field invites to unsupported analogy and may lead to conflicting precept has been made evident; that likewise it has led some of the followers of the genetic view to shallow interpretations and rash hypotheses is a still more serious arraignment. Questionable as may be this and allied phases of the genetic construction, and real as are the dangers of half-baked theories which it attracts, there is no reason to extend the criticism beyond the warrant of its pertinence. It is true that a more cautious temper of application and a keener appreciation of the limitations of biological analogies are desiderata in genetic educationalists; it may also be that the versatility of this profession is of itself provocative of similar indiscretion. The leaders of the movement may take credit for its strength and can not wholly escape responsibility for its divagations.

UNIVERSITY OF WISCONSIN.

JOSEPH JASTROW.

*Psychologie der Kunst.* RICHARD MÜLLER-FREIENFELS. Leipzig: Teubner. 1912. 2 Vols., pp. 232 and 220.

The author divides his treatise into four books which treat respectively of the psychology of art enjoyment, the psychology of artistic production, the work of art and its forms, and the psychology of evaluation. In the first book he distinguishes certain important types of art enjoyment. These are (A) the sensory types, comprising (1) the visual-sensory, (2) the auditory-sensory, (3) the motor-sensory; (B) the imaginative types, which are (1) motor-imaginative, (2) objective or perceptual imaginative, (3) the verbal-imaginative; (C) the theoretical or reflective types. The doctrine of *Einfühlung* is not accepted as

applicable to esthetic enjoyment in general, but is classified as descriptive of the motor-sensory type only. Hence the analyses of Lipps and of Lee and Thompson are valid only for a limited class of observers. The author, however, does not submit any specific introspective reports. His final characterization of art enjoyment describes it as a general enhancement of our psychical life, a heightening of our whole life-feeling, and as a pleasure which carries its worth in itself.

The second book emphasizes the difference between the esthetic attitude and the productive, and indicates the essential community between the artist and the artisan. The creative impulse is an intoxication and ecstasy. Its sudden onset and impersonality are commented on. The technical expression is so intimate a part of the artist's thought that the artist seems to think best when the tools of his craft are actually in his hand.

The third book attempts to show a correspondence between the most fundamental forms of art and various forms of human functioning. Thus rhythm—as many writers have shown—is a favorable and economic form for activity in general to take. Consonance in music and rhyme in poetry afford a maximal impression with a minimal expenditure of energy. The same formula applies to art forms which appeal to the eye.

The fourth book gives, as the most important principle of esthetic evaluation, the principle of extensivity. This means that the work of art which occasions the greatest sum of value-feelings has the highest worth, but "greatest extensivity of value" is not the same as the judgment of the majority at any one time, for it takes into account the duration of such judgments. The conclusion emphasizes the close connection between art and life, and dwells on the stimulative power of art. The general standpoint of the book has much in common with Guyau, whom, however, the author does not seem consciously to follow.

The work is difficult to judge. It is not a history of esthetics or of art-theory, it does not present any well-elaborated or strikingly original standpoint, nor can it be accepted as an adequate survey of the present status of psychological esthetics. (It is, for example, surprising that in a discussion of rhythm there should be no mention of Hurst and McKay, Awramoff, Wallin, Miner, Stetson or Macdougall, and that in visual esthetics the important experimental work of Witmer, Martin, Puffer, and Rowland should be entirely overlooked.) Yet Freienfels's work is not without interest and value. The author's judgment is at all points moderate and sane. Perhaps the most timely and readable part is the concluding chapter on art in its relation to life as a whole.

KATE GORDON.

LOS ANGELES.

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## JOURNALS AND NEW BOOKS

REVUE NEO-SCOLASTIQUE DE PHILOSOPHIE. January, 1913. *Vingtième année* (pp. 1-12): M. DE WULF. — An account of the



work and programme of the *Revue Neo-Scholastique* during the last twenty years. *La démonstration métaphysique du libre arbitre* (pp. 13-38): P. DE MUNYNYCK. — In order to prove the existence of free will, we must not resort to the testimony of consciousness, as has been done too often since Descartes, but to the metaphysical argument. *Les caractères de la Philosophie moderne* (pp. 39-51): L. DE LANTSHEERE. — Modern philosophy differs from ancient and medieval thought by its independence from religion, its lack of respect for authority, its mechanical conception of the universe, and the importance it attaches to the problem of knowledge. *Roger Bacon et la composition des trois "Opus"* (pp. 52-68): P. MANDONNET. — Contrary to ordinary belief, the "Opus majus" was not completed before the "Opus minus et tertius," but afterwards, in 1268. The Opus minus and tertius have remained incomplete; but they were interrupted in or before the year 1267. *L'expérience religieuse et la Philosophie de W. James* (pp. 69-87): G. LEGRAND. — Interesting, suggestive, fraught with just and precious reflections, James's religious conception presents multiple inconsistencies due to the pragmatic spirit lying at its foundation. *Le mouvement néo-scholastique*: M. DE WULF. *Comptes rendus*. W. Mackenzie, *Alle fonti della vita*: F. PALHORIÈS. L. Habrich, *Psychologie pédagogique*: F. FRANSEN. M. Losacco, *Razionalismo e misticismo*: B. NARDI. B. Varisco, *Conosci te stesso*: F. PALHORIÈS. E. Troilo, *Il Positivismo e i diritti dello spirito*: F. PALHORIÈS. A. Schmid, *Geheimrat Dr. Alois Ritter v. Schmid*: A. PELZER. E. Dupreel, *Le rapport social*: G. LEGRAND. *Piccola bibliotheca scientifica della Rivista di Filosofia Neo-Scholastica*: J. VAN MOLLÉ. J. Gretdt, *Elementa philosophiæ aristotelico-thomisticæ*: N. BALTHASAR. P. L. Rodes, *De los cuerpos reales al eter hipotético*: J. LEMAIRE. B. Rawitz, *Der Mensch*: J. VAN MOLLE. *Sommaire idéologique des ouvrages et des revues de philosophie*.

REVUE DE THEOLOGIE ET DE PHILOSOPHIE. January, 1913. *Des fictions dans la science et dans la vie humaine* (pp. 12-33): P. BRIDEL. — A critical analysis of Vaihinger's "Die Philosophie des Als Ob," a work written in 1876, and which presents a striking similarity, on the one hand, to the pragmatic theory of reality, and, on the other hand, to Santayana's conception of religion. *Le cardinal Charles Borromée* (pp. 34-50): E. CHOISY. — Charles Borromeo is a beautiful character, a great reformer of the church, a statesman, a leader. Similar to Calvin in many respects, he lacks his political and theological genius. His religion is the Roman religion; it is not the religion of moral conscience and of the grace of God which is in Jesus Christ. *Charles Secrétan: L'évolution de sa pensée* (pp. 51-62). A. MAURER. — Although generally classified as a disciple of Schelling, Secretan is not the man of a system. He is in many respects a precursor of Bergson and James, and also the creator of a conception of universal life which is perhaps destined to become the leading idea of the future. *Expérience religieuse et psychologie de la religion* (pp. 63-81): E. LOMBARD. There is, properly speaking, no religious experience. There are, however, emotional experi-

ences with regard to which religion plays the part of a super-experience.  
*Revue générale. Miscellanées.*

- Myers, Garry C. A Study in Incidental Memory. Archives of Psychology, Number 26. New York: The Science Press. 1913. Pp. iii + 108.  
Patrick, M. L. and G. T. W. Külpe's The Philosophy of the Present in Germany. New York: The Macmillan Company. 1913. Pp. vii + 256.  
Town, Clara H. Binet's and Simon's A Method of Measuring the Development of the Intelligence of Young Children. Second edition. Lincoln, Ill.: The Courier Company. 1913. Pp. 82.
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## NOTES AND NEWS

### LETTER FROM PROFESSOR HEIDEL

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

In my review of Cornford's "From Religion to Philosophy," published in this JOURNAL (Volume X., page 103), I said (p. 106) that Professor John Burnet had in a private communication virtually retracted the statements regarding *φύσις* made in his "Early Greek Philosophy" (p. 12 sq.). I find that Professor Burnet did not so intend his remarks, and I therefore cheerfully withdraw my comment. At his suggestion I here set down the text of the communication to which I alluded. It is dated January 30, 1910, and refers to my *Περὶ Φύσεως*:

'I have to thank you for sending me your paper. I think that there is probably less difference between us than you seem to suppose. I was concerned chiefly to call attention to what appeared to me at the time to be a generally neglected view of the meaning of the term. You fully admit that it has this meaning among others. It is thus a matter of degree. For reasons which I can hardly go into now, you seem to me to have inclined the scale too far in one direction, as I very possibly have done in another. You may be sure that what you say will be fully and respectfully dealt with the next time an opportunity offers. One thing is absolutely certain, and that is that you are right in making so much of the Hippokratean uses of the word, and that you have done a most valuable piece of work in bringing so much material together.'

Since the point at issue is whether Professor Burnet intended to retract his statements in question and I now know that he did not, I refrain from further comment at this time. If he ever discusses *φύσις* again, as I hope he will, there may be occasion to reopen the debate regarding the meaning and implications of the term.

W. A. HEIDEL.

MIDDLETOWN, CONN.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE EMPIRICAL STATUS OF GEOMETRICAL ENTITIES

CONCERNING the difference between concepts and percepts, philosophers are widely agreed. Since Socrates there has been but one verdict whenever men have asked whether concepts are perceptible. They will all tell you that there are profound and ineliminable differences between cognizing justice and noting the crow in yonder tree. The entities known through reflection are not those discerned with mere eyes and ears. Knowledge is radically unlike perception. An idea is not a percept.

Now, I would not criticize here this psychological dualism in general. I wish only to lay bare one particular error which it has engendered and one fallacy by which men have argued themselves into that error. This error is the one of supposing that the concepts of pure geometry can not be found in the realm of percepts. And the fallacy leading to the error is a complex variety of the fallacy of accident; a variety so distinct and so dangerous that it deserves a brand of its own.

While the proofs of the points I am about to make are not sufficient to disprove the psychological dualism out of which the error and fallacy arise, nevertheless they must bring this hypothesis under fresh suspicion.

A defender of the psychological dualism might consistently accept the perceptibility of geometry's ideas and retain his faith in his hypothesis; he could do so by declaring that, although he had supposed those entities to be concepts, they turn out to be percepts. But I fancy that few persons would be willing to take refuge in this opinion; for it is just such ideas as those of geometry (and mathematics) which Plato and nearly everybody else have regarded as most obviously conceptual. They seem to be "pure ideas." In them is no taint of the tangible nor of the visible. If, then, we can show the perceptibility of even one of them, grave doubt will be cast upon the conceptual status of all others.



*A Specimen of the Fallacy.*—Although the fallacy I am about to describe is committed by many thinkers of much higher philosophical skill and repute than Karl Pearson, I prefer to cite this gentleman's use of it. Pearson's bad reasoning is so bold and undisguised that any undergraduate who scans may penetrate its errors. One of the numerous passages in "The Grammar of Science" flaunting this particular fallacy occurs in the chapter on space and time. Here Pearson undertakes to prove, from a well-known fact about the "inaccuracies of perception," that conceptual space is a "purely ideal limit of a process begun in perception" and hence is "only an ideal symbol," a "scientific short-hand" whose validity lies only in "the power it gives us of codifying past and predicting future experience." The fact he employs is this:

"The geometrical ideas of line and plane involve absolute sameness in all their elements and absolute continuity. . . . But do we experience anything like these in our perceptions? The fly-leaf of this book appears at first sight a plane surface bounded by a straight line, but a very slight inspection with a magnifying lens shows that the surface has hollows and elevations in it. . . . However great care we take in the preparation of a plane surface, either a microscope or other means can be found of sufficient power to show that it is not a plane surface. It is precisely the same with a straight line. . . . Our experience gives us no reason to suppose that with any amount of care we could obtain a perceptual straight line or plane, the elements of which would on indefinite magnification satisfy the condition of ultimate sameness involved in the geometrical definitions. We are thus forced to conclude that the geometrical definitions are the results of processes which may be started, but the limits of which can never be reached in perception; they are pure conceptions having no correspondence with any possible perceptual experience."

*The Misinterpretation of Geometry Underlying this Argument.*—Here is an argument which is as simple and as plausible as it is familiar. It is, however, wholly dependent upon a very loose interpretation of the geometrical definitions which it contrasts with percepts. And this same laxity smuggles into the definitions a meaning utterly foreign to them and to the intent of the geometer. To be specific, Pearson misconstrues "absolute" in the definition of the straight line. He takes it to mean "invariable in all *physical* relations." But, to the geometer who never employs the adjective technically as a description of figures, it carries only the colloquial meaning of "perfect." Now, to what does this perfection refer? I think there can be no doubt as to what reply the geometer would make to the question. He certainly would say that a line or other figure is "absolute" or "perfect" *if it fulfills its definition*. To put his case still more sharply, he would say that an "absolute" quality of a straight line, in his science, is merely a precise relation of agree-

ment between something that is described or defined and the specifications included in the definition; it is not necessarily a quality which the object displaying it always possesses under all conditions.

When he speaks of the straight line as having all its elements "absolutely" the same and continuous, does he allege that there is, *in nature*, an object which, however magnified to the eye, will always look continuous and homogeneous? Certainly, he does not. On the contrary, he says only that, *wherever* you find an object which is continuous and homogeneous in the manner named, *there* you have what he terms a straight line. Please emphasize "wherever" and "there"! The careful speaker, in geometry, does not use these words; instead, he says "if" and "then." He says: "I shall define a straight line as one which is continuous, homogeneous, etc." And then he goes on with his geometrical reasoning: "Whenever I have a straight line, I can do thus and so with it; it has these peculiarities. And so on." Not once does it occur to him to ask whether this object might be *approached* or *manipulated* in such a manner as to be changed from a straight line into a crooked or a broken one. In this respect he does as anybody else does when engaged in analysis. The chemist who is analyzing a poison does not ask nor care whether the stuff might be a food under some circumstances. He does not even ask whether the atoms of the poison may not "really" be ether whorls. As soon as he asks this question, he passes beyond analysis. It may be a very useful question to ask, but it raises new issues; and nothing discovered in connection with these new issues can alter the facts of pure analysis.

The geometer defines a straight line as continuous and homogeneous, but he does not say anything whatever about the conditions of its existence in nature *nor about its looking the same from every point of view*. There is absolutely nothing in his definitions nor in their implications which necessitates his forming any opinion whatever about the invariable appearance of the real line under all circumstances. He does not feel obliged to say that, because a three-inch straight line looks shorter, when viewed from a distance, therefore it is not really a three-inch line, in the sense of the original definition (which, of course, is the only sense permissible). Why, then, should he admit to the philosopher that the line is only an "ideal construct," inasmuch as it changes its appearance as you draw nearer to it and magnify it? No such concession can be wrung from the geometrical definitions themselves; for all they state is that a homogeneous continuum of one dimension shall be designated a straight line. But where shall we find such a continuum? Geometry is silent. Is it impossible that such a continuum display its peculiarities under some circumstances and not under others? Again, no

word from geometry. One might as well ask of it whether straight lines may not be green as well as red, or curves used in frescoes as well as in engineering.

Now, please observe carefully the implications of the geometer's own definition and its restrictions. "*If continuous and homogeneous,*" says he, "*then a straight line.*" If this be the definition, and if it be taken without any spurious interpretations, then we must say that, *whenever a line is seen as homogeneous and continuous, then it is a perceived straight line.* In other words, if I observe a line devoid of every heterogeneity and break, then I perceive precisely what the geometer means by a straight line. I find no logical escape from this conclusion. For to put it in syllogistic form,

1. A homogeneous continuum of one dimension is a straight line.
2. I see a homogeneous continuum of one dimension (*e. g.*, the ridge line of a distant house against the sky).
3. Therefore, I see a straight line.

This conclusion is in no wise vitiated by the fact that, *under some conditions of existence in the physical world*, a physical object which exhibits geometrical straightness may be viewed or manipulated so as to lose its straightness *under the new conditions*. The above syllogism can be rejected only by reading into the definition of the straight line certain qualifications which the geometer rejects, namely, the invariability of a *physical* straight line under *all* possible conditions. This qualification the geometer can not make without altering his purpose and his methods of investigation. Furthermore, it would be a gratuitous assumption which a very little research would quickly prove absurd.

*The Fallacy of Manipulating the Object.*—The fallacy we are now interested in may be placed in contrast with the above syllogism. Pearson reasons as follows:

1. A line is absolutely straight only if straight in every relation.
2. The line I perceive as straight is straight only in this and a few other similar relations.
3. Hence it is not absolutely straight: and so does not fulfill the geometrical definition.

The experimental method of establishing this conclusion is as we find it in the passage already cited from Pearson. You choose any object about which you wish to prove your point; you bring it into various new relations; you note that it now differs in some manner from its condition in the original relation wherein you found it; and now you are ready to infer—what? That there is a concomitant variation of characters and relations? No! You infer rather that the *original* character was not a genuine character of the object



under investigation. The presupposition of this last statement is the major premise of Pearson's syllogism, above formulated.

Apply this argument, as Pearson does, to the geometrical straight line, and you have the following train of thought: "Straightness is the quality of a certain line; the quality is *in* the line; hence, if you find in nature a line which seems to have straightness, you may test it surely by *looking into the line*. And, as the quality must be in there, no matter how you look, and, as you see best into the line by magnifying it, it follows that the more you magnify the line, the more likely you are to discern its straightness. If, then, you don't find the straightness, the line plainly lacks the quality '*absolutely*.' For there is only one way in which a line can have a quality; and that is inside it. If the straightness is the appearance of the line *at a distance*; or if, to eliminate psychology altogether, the line casts a straight projection on a certain plane (though *not* on a certain other plane), this straightness does not 'belong' to it at all; it is not really *its* quality, or—as others would say—it is not a real quality of the line (but an ideal one)."

*Reductio ad Absurdum of this Argument.*—The argument might, of course, be attacked through its metaphysical presuppositions. We might urge, and correctly, too, that no adequate reason appears for our refusing to rate as an intrinsic or proper character of an entity one which the entity displays only under certain conditions. In saying this, we should be challenging the old substance-attribute hypothesis—and so dragging ourselves into a controversy too long to be here begun. Or, again, we might expand the point previously made, that "absolute," in a description of a figure, does not mean the same as "absolute" in metaphysics. But the most satisfactory refutation of the Pearsonian argument is that one wherein we apply the latter not to a supposed case of perceiving an idea, but to a perfectly simple case of perceiving a character admittedly perceptual. The singular beauty of such an application is that it forces whomsoever accepts it to conclude that all perceptual qualities are precisely the same sort of "ideal constructs" (or "scientific shorthand") that the geometer's straight line is. Here is a specimen of such reasoning.

Consider a book with a blue cover. We wish to find out whether the book is really blue or not. First, we define blue as accurately as possible. We state that it is the complementary of a designate yellow, that it occupies a certain position in the spectrum, that it is produced by solar light being passed through water saturated with certain chemical compounds, etc., etc. We next proceed to manipulate the blue under observation, aiming to discover whether it remains constant under all conditions. We pick up a magnifying glass

and peering through it, discern the formerly even blue now streaked and criss-crossed with darker lines made by the warp and woof of the cloth. Then we put a small shred of the blue stuff under a high-power microscope, and lo! the color vanishes! What we now perceive does not occupy the place in the spectrum which we have defined as blue. Nor is it the complementary of a designate yellow. Nor is it that which is produced by solar light passed through the saturated solution above spoken of. In short, the book cover turns out to be not absolutely blue, but only relatively blue. And what conclusion shall we draw from this fact? We shall say—following the Pearsonian argument loyally—that the blue which we have *defined* is not a perceptual blue at all, but an “ideal construct,” a piece of scientific shorthand invented for the sake of accelerating our intellectual transactions. The blue which is the complementary of a designate yellow can never be seen with mortal eye. And invisible is the blue that lies between green and violet in the normal solar spectrum. For has not that which seemed to be such a blue proved to lose the appearance of it when magnified?

The reader will discover readily enough that this *reductio ad absurdum* opens the way to a very important generalization touching the experimental method on which the argument rests. Is it not clear that no inference about a datum is valid which denies the immediate character of that datum absolutely? Can we doubt that any argument which, by comparing percept with percept, comes to reject as “merely apparent” the character of such a percept, must end where Pearson ends unwittingly, namely, the complete erasure of all differences between percept and concept? The very logic by which one manipulates an ordinary object of perception so as to make it differ from its former self, thereby proving that it is not “really” what its former self seemed to be,—that very logic, I say, leads irresistibly to the preposterous conclusion that we can not see nor hear nor taste nor smell anything which we can define. The instant we can say with assurance that a character has a certain definite nature, the character escapes our senses and becomes a mental creation, a convenient artifact. And forthwith the fundamental difference between concept and percept has disappeared, for the percept itself has ceased to exist as a designable entity.

*Two Objections to this Reductio ad Absurdum.*—To the above refutation two replies promptly suggest themselves. In the first case, it may be urged that my comparison between the defining of the straight line and the defining of blue is quite unfair, in that the geometer does not derive his definition of the line in the manner that I have derived the definition of blue. He does not merely describe a line which he perceives; he begins with a set of ultimate presuppo-

sitions and axioms, and from these he deduces his propositions about the straight line which he incorporates in his definition of the latter. Thus the definition resembles not at all that other one of the color; for this is a simple summary of characters seen, whereas the geometrical one builds upon other than perceptual foundations. The second objection to the *reductio ad absurdum* is that a genuine and completely defined straight line is not perceived. Such a line, we shall be told, is much more than a continuous, homogeneous structure of one dimension; it is a much more precise structure than these few characterizations of it indicate. No geometer would accept these latter as a satisfactory definition. For the line can be defined adequately (unequivocally) only if based upon a number of axioms, such as the seven axioms of connection and the five axioms of order which Hilbert employs in his "Foundations of Geometry." Furthermore, we do not perceive the essential geometrical properties of the line whose definition is based upon those or similar axioms. For instance, between any two points on the line there exists an unlimited number of points; but would anybody dare assert that he sees this infinitude whenever he glances at an apparently straight line? Or, again, will he say that he actually sees that "there is no next position" in the linear continuum before him? If he will not, then he admits that what he sees is not what the geometer means and refers to under the term, "a geometrical straight line."

*Answers to These Objections.*—The first objection is the less serious. For few to-day will maintain it consistently. Geometers pretty generally concede that they get their original information about figures and their relations from perceived forms. The primary subject of inquiry in geometry appears in its very name; it is the measuring of the earth. And there can be no doubt that for centuries geometers had no thought of analyzing anything save the observable character of space and spatial entities. Not until the end of the last generation did another opinion arise and gain credence. And this new opinion does not *contradict* the earlier one, but only *supplements* it. According to it, geometry is founded upon certain postulates, certain indemonstrables, and certain indefinables; and, as these are made to vary, so varies the propositions which may be inferred from them. Thus, it becomes logically possible to construct a multitude of different "geometries"; to do so, one has only to omit certain basic propositions. Thus, as Hilbert shows,<sup>1</sup> by dropping the axioms of congruence, one may deduce a plane geometry in which Desargues's theorem is not valid. But what does all this signify as to the relation between the "ideal" line of geometry and the perceptual line?

<sup>1</sup>"Foundations of Geometry," § 23.



Well, it signifies much less than has been commonly supposed. All it means is that modern geometers have unearthed the presuppositions (logical foundations) of natural space and have discovered that many of them are reciprocally independent (that is, they are not derivable from one another by deduction; and the implications of any one of them individually do not depend upon the other presuppositions). *In finding such presuppositions, the investigator does not therewith alter either the character or that which presupposes them.* If the presuppositions have been correctly discerned, they must be the very propositions which imply the character of the observed spatial entities under inquiry. They must logically generate the straight line whose logical presuppositions we have been seeking. If they fail to do so, they are not the genuine presuppositions of the line (and its space system).

In saying this, however, I may seem to have fortified those who raise the second objection. For I admit that the geometer defines the line, not by simple description of what is immediately seen, but rather in terms of the implications of certain perceived characters. And I grant that these implications themselves are not necessarily perceptible. Well then, is this not a confession that we do not perceive the line that is geometrically defined? This is quite different from Pearson's argument, which is based upon the fallacy of manipulating the object. And it calls for serious consideration. It proves, however, to be untenable; for it leads to a fresh *reductio ad absurdum*, very much like the former one.

*Second Reductio ad Absurdum.*—The features of the geometrical line which we do not perceive are the implicates of the fundamental space characters which we do see in the visible line. And, truly, we never see with our eyes the implicates of any percept. We discover them otherwise. But what of it? How does this fact establish an incongruity between the percept and the "ideal" line? What warrant does it afford for the belief that the percept lacks some characters which the ideal entity possesses? And that this deficiency makes the former a different thing from the latter? For my part, I can not discern the slightest ground for such views. Indeed, they lead to a preposterous conclusion, once we apply their logic generally. They compel the absurd inference that we never perceive anything whatever. This result can be shown in the following manner.

The argument leading to it runs thus:

1. We perceive the line *A*. (The distance between points *B* and *C*.)
2. *A*, when analyzed logically, is found to imply (presuppose)  
*m, n, o, p. . . .*

3. Hence the "real"  $A$  is the entity logically determined by  $m$ ,  $n$ ,  $o$ ,  $p$ , . . .
4. Hence the "real"  $A$  is a logical entity *and nothing else*.
5. Hence the "real"  $A$  is not a perceived entity.

In this sequence two fallacies appear. The first shows itself in the equating of "logically determined" (in 3) with "a logical entity" (in 4). The second lies in the last assertion in 4, that  $A$  is *nothing but* a "logical entity." The former sounds plausible enough, so long as we are talking about the geometer's line; but it loses every guise of intelligibility, the instant we apply the equational form to other matter. The fact that so much reasoning and logical analysis are required to define and describe adequately the straight line *seems* proof aplenty that the resulting entity defined is a creature of logic. But this turns out to be a mere impressionistic confusion, as I shall show in a moment. As for the second fallacy, it is the one which Perry has well named "the fallacy of exclusive particularity."<sup>2</sup> As it has been recently discussed in several places, the reader who is unfamiliar with it is referred to those passages. It is not my purpose to lay bare those errors; I wish only to accept the argument using them and show that its consistent outcome is quite absurd. It is now time to do this.

Suppose that we were investigating, instead of a straight line, a simple color. Suppose we asked ourselves what rigidly defined this particular red. We should not inquire into its actual cause, but only into the conditions of its generation in the logical sense. That is to say, we should not try to learn whether the color resulted, in this instance, from the combustion of calcium or from the glowing of a chunk of anthracite or from the setting sun shining through fog banks. Rather should we seek a set of propositions which determine logically a state of affairs (universe of discourse) wherein red can be defined in terms of some of those propositions. Thus, we might find that red implied (presupposed) a space system, a medium capable of propagating disturbances, a type of disturbance varying with respect to its rate and its amplitude, a refraction of the path of disturbance in passing from a medium of one density to that of another, and finally an index of refraction varying in a certain specified mathematical manner with the disturbance rate. Given these conditions, the red we see might then be *defined* as that disturbance which, in a given spectrum, produces a line in a certain position (which might be numbered from any arbitrary point of reference or otherwise designated). From the point of view of logical analysis, such a definition would be identical in structure, origin, character,

<sup>2</sup> Cf. Perry, "Present Philosophical Tendencies." Also, "The New Realism," pages 14, etc.

and value with the geometer's definition of the straight line. It would be logically independent of the explanation of the particular existential red, and also adequate as a basis for deducing propositions about the color.

Now, as we perceive the plain red itself, we do not see the ether that we have presupposed. We do not witness the ether waves. We can not detect by immediate observation the refractive index nor the law of sines which it expresses. What then shall we infer as to the color which we do perceive? Following the original argument under criticism, we must say that the red perceived is not the rigidly defined red; or, more loosely phrased, that the red we see is not the red which theoretical physics deals with in its deductions. Or, to revert to the inaccurate language Pearson employs in speaking of the straight line, we must say that the color we see is not "absolutely red"; that it seems to be red but in reality isn't.

Is not this a genuine *reductio ad absurdum*? The argument begins with perceptual red as a datum, and after having found the presuppositions which make that same perceptual red logically possible, it ends by asserting that the logical presuppositions of the color prove that we do not really see the color! If this is not sheer nonsense, what is?

There is another way of stating the defect latent in the argument; but, as it properly demands lengthy consideration, I can only indicate it here. The discredit cast upon the percept rests ultimately upon the presupposition that an entity is not experienced "in its reality" unless its implications (presuppositions) are experienced in and with it. This, of course, is our old friend, the internal theory of relations, bobbing up in fresh guise. In our present matter of inquiry, the doctrine may be fairly restated as follows: "A percept which is not identical with its implicates does not possess the characters it seems to possess." A line which seems unqualifiedly straight really is not if its perceptual form does not contain the implicates of straightness. Now, as a general metaphysical theory and as a factor in theory of cognition, this hypothesis has been amply refuted by Spaulding.<sup>3</sup> But the particular weakness of its present application might profitably be worked out. Such an inquiry would show that that philosopher who asks a poor little percept *or anything else* to live up to his internal theory is asking a logical impossibility. For no state of affairs, no entity, no proposition is identical with its own implicates *unless it implies only itself*; but none does this, and *none can do it without self-contradiction*. But I am not going to essay the proof of all this now. I leave it as a suggestion to the reader.

<sup>3</sup>"The Logical Structure of Self-refuting Systems," *Philosophical Review*, 1910. Also cf. his essay in "The New Realism," pages 165, etc.



*Conclusion.*—We have considered the only two arguments which are advanced nowadays to prove that the fundamental entities and relations dealt with by geometry are not given perceptually, but are some sort of “constructs.” We have found that each argument ends in a *reductio ad absurdum* wherein the very subject of inquiry itself is denied. We have not investigated the status of all geometrical entities; but we have shown that, at least in the case of the straight line, the arguments against its perceptual existence are untenable. It is highly probable that the same might be shown with respect to several other entities, such as the circle, the triangle, the ellipse. At the same time, it is quite obvious that many other geometrical entities are imperceptible, such as the sine of an angle, or the dense series. It seems pretty safe to conclude, then, that we perceive exactly what we perceive; that when we see a line as absolutely straight, we see an absolutely straight line. And the status of what we see is in no manner changed either (1) by the fact that, from another point of view and with other instruments and other observers, it may exhibit another quality; or (2) by the fact that it does not exhibit all of its implicates. Both the qualities of other points of view and also the analytically discovered implicates are merely *added* characters, not nullifying forces. If this is true, then we must return to the natural and naïve opinion that *we directly perceive a number of geometrical entities; that these entities are not “ideal constructs” at all; that they are not constituted by their implicates; and finally that whether we can or can not perceive a geometrical entity depends upon the character of the particular entity in question, upon the angle of observation which we can take toward it, and upon the power of our perceiving organs.* In short, the problem of perceiving such a one differs not at all from the problem of seeing a molecule.

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## CONTENT VERSUS “KUNDGABE” IN INTROSPECTION

PERHAPS the strongest charge which has been brought against the investigators who claim to have discovered “imageless thoughts” in introspective reports, is to the effect that no description of these new contents has, as yet, been secured. The criticisms of v. Aster<sup>1</sup> and Dürr<sup>2</sup> on Bühler’s results bear upon this point, and since Dürr was one of the two observers upon whom Bühler relied

<sup>1</sup> *Zsch. f. Psychol.*, 1908, 49, page 69.

<sup>2</sup> *Zsch. f. Psychol.*, 1908, 49, page 315.

most extensively for his data, the charge has acquired added weight. Titchener, who has reviewed the evidence in detail,<sup>3</sup> is of the same opinion, to wit, that instead of describing imageless contents, the observers in these experiments merely communicated information about that which they had experienced, the real content of the experience having eluded them.

Titchener further upholds Jacobson's results<sup>4</sup> which aim to show that there are no specific "meaning processes" which underlie the informational statements of meaning, and maintains, on the basis of his own investigations, that the "attitudes implied in, or demanded by, the two modes of report . . . turn out to be, the one, that of descriptive psychology, the other, that of logic or of logical common sense."<sup>5</sup>

Investigations which I have made on the consciousness of meaning have revealed such a striking difference in the attitudes and results obtained from two different types of problem, that it has seemed to me worth while to report the fact briefly.

When I began my investigations in the fall of 1909, I had at my disposal only untrained observers. I wished to repeat some of Bühler's experiments, but realizing the unusual demands upon introspective ability involved in his method of introspecting the meanings of aphorisms, I decided to begin my investigations with the simpler problem of introspecting the meanings of words. Only after four such series of 50-100 words each had been performed, did I venture to study the consciousness evoked by aphorisms and simple logical problems.

In working up my results, I made use of a statistical method, classifying the data of each report in accordance with certain familiar categories. The main groups which proved adequate for the experiments with word-stimuli were the following: (1) Concrete imagery: visual, auditory, kinesthetic, and miscellaneous. Here were classed all concrete images, including bodily sensations. (2) Verbal imagery: visual, auditory, kinesthetic, and miscellaneous,—the latter group embracing instances in which the imagery was mixed or inexactly identified. Some sensational factors were also attributed to this class. (3) Affection: feelings of satisfaction or dissatisfaction, amusement, familiarity, and the like, although it may be noted in passing that many of these instances appeared to be judgmental rather than truly affectional in nature. (4) Notions: imageless contents, embracing both concrete and abstract data which were

<sup>3</sup> "Experimental Psychology of the Thought-Processes," 1909, pages 145 ff., also *Am. Journ. of Psychol.*, 1912, 23, page 165.

<sup>4</sup> *Am. Journ. of Psychol.*, 1911, 22, page 553.

<sup>5</sup> *Loc. cit.*, *Am. Journal of Psychol.*, page 182.

declared to be as definitely present as were the elements of the other categories, but in which no imaginal or affectional characteristics were evident.

When I proceeded to treat the reports secured with aphorisms and other statements involving a more extended thought-process, I was surprised to find that my method was inapplicable. Very rarely was an image reported, and no longer were the notions described as contents, which could be differentiated from images and affections. The introspection appeared to be directed, not upon the content of the experience, but upon the process and the relationships which were involved.

For the purpose of this article I have selected results from two of my series which are as nearly comparable as possible, in order to indicate this difference. Series III. was the third series of experiments performed. It included 100 words, 40 of which were repeated from previous experiments and are here eliminated. Observer A performed but half of the series, while observer O., who used a different series of words, performed 32 "originals" and 16 "repeats."\* Series V. followed series III. after an intervening series in which the reaction-time was primarily the object of study. Series V. experimented with aphorisms, the set used by observer O. being again different from that used by the other three observers. Both words and aphorisms were given orally by the experimenter, the observer being instructed to secure the meaning and react by uttering the word "yes" (or "no," in the case of aphorisms where disagreement was to be indicated). Since the method used in series V. was altered during the course of the series to adopt a visual form of exposure, it happens that the number of experiments here reported differs for each observer.

The time of reaction was measured with a stop-watch. The results are indicated in the following table:

TABLE I

Obs.	Series III.				Series V.			
	Number	Arith. av.	Median	Mv.	Number	Arith. av.	Median	Mv.
A.	30	5.74"	5.4"	1.36	20	12.88"	11.0"	4.42
D.	60	1.31	1.2	0.182	41	7.14	6.6	1.97
V.	57	1.72	1.8	0.215	27	6.82	6.4	1.56
O.	32	5.09	4.6	1.586	32	17.9	15.2	6.42

It will be noted that the reaction-time of series V. was much longer and less uniform than that of series III. This, of course, re-

\* The observers of these two series were the following persons: A., Mr. W. S. Adkins, a senior student; D., Mr. F. A. Davis, a junior student; V., Miss Sabra Vought, the university librarian, and O., the writer.



quires no special comment. The fact that in series III, the observers were instructed to "be in no hurry to react," may account in part for the lengthened time of observers A. and O., as compared with that of observers D. and V., though it was also evident that the first two observers were of a more deliberate type than the latter two.

The results of the statistical inquiry into the reports of the two series are given in the following table:

TABLE II

		Series III. Obs. A. 30 ex- periments		Series V. 20 experiments		Series III. Obs. D. 60 ex- periments		Series V. 41 experiments	
		No.	%	No.	%	No.	%	No.	%
Concrete imagery	{ vis.....	14	46.6	2	10	9	15	1	2.4
	{ aud.....	2	6.6	—	—	1	1.6	—	—
	{ kin.....	2	6.6	—	—	3	5	—	—
	{ misc....	—	—	2	10	3	5	—	—
Total.....		18	60.0	3	15	16	26.6	1	2.4
Verbal imagery	{ vis.....	5	16.6	—	—	21	35	1	2.4
	{ aud.....	—	—	—	—	2	3.3	—	—
	{ kin.....	4	13.3	—	—	4	6.6	—	—
	{ misc....	1	3.3	8	40	29	48.3	1	2.4
Total.....		10	33.3	8	40	56	93.3	2	4.8
Affections.....		13	43.3	6	30	6	10	1	2.4
Notions. ....		29	96.6	20	100	55	91.6	41	100

		Obs. v. 60 ex- periments		27 experiments		Obs. o. 32 ex- periments		31 experiments	
		No.	%	No.	%	No.	%	No.	%
Concrete imagery	{ vis.....	25	41.6	3	11.1	11	34.3	4	12.9
	{ aud.....	1	1.6	—	—	—	—	—	—
	{ kin.....	5	8.3	—	—	2	6.2	—	—
	{ misc....	—	—	—	—	2	6.2	—	—
Total.....		30	50	3	11.1	15	46.8	4	12.9
Verbal imagery	{ vis.....	14	23.3	1	3.7	11	34.3	3	9.6
	{ aud.....	1	1.6	—	—	—	—	2	6.4
	{ kin.....	1	1.6	—	—	2	6.2	—	—
	{ misc....	2	3.2	1	3.7	1	3.1	3	9.6
Total.....		18	30	2	7.4	14	43.7	8	25.8
Affections.....		4	6.6	3	11.1	7	21.8	4	12.9
Notions. ....		48	80	27	100	31	96.8	31	100

(The "totals" of concrete and verbal imagery refer to the number of different experiments in which the imagery occurred.)

Here are indicated the total number of experiments, and the number and percentage of appearances of each of the elements described above. It will be noted that despite the individual variations, which are striking, the presence of imagery, both concrete and verbal, in series III. was very frequent for all observers. Affection occurred

less often, while notions were the most invariable contents, except in the case of observer D. who reported verbal imagery more often. We may add that the instances in which imagery and affection appeared to make up the complete content of the experience were, in number, one for observer A., five for observer D., twelve for observer V., and one for observer O. The instances in which only notions were reported were, in number, four for observer A., fifteen for observer D., twenty-one for observer V., and one for observer O.

It is not the purpose of this paper to enter into a more detailed discussion of the grounds upon which notions may be distinguished from imagery and affection, but merely to emphasize the fact that in reports such as these, where description of content is decidedly the rule, the best of evidence should be procurable for such a distinction.

The results of the same method of analysis as applied to series V. are a striking demonstration that here description was *not* the rule. Only in the case of affections do we find percentages of appearance which approach at all nearly to the percentages of series III. Verbal imagery for observer A. is slightly in excess of that found in the earlier series, but every other result for imagery is relatively negligible. As for the appearance of notions, the ascription of 100 per cent. in each instance is purely inferential.

In making this comparison, it should be borne in mind that series V. was performed by the same observers who had previously demonstrated their ability to describe psychologically in each of the four series with word-stimuli. The fact that they did not use this method in series V. indicates the fundamental difference in the attitudes which prevailed in the two series. From this I conclude that the method of studying the thought-process by the arousal of complicated experiences is unsuited to a description of content. The simpler method of arousing a brief consciousness of meaning with reference to a single object or word, however, seems from these results to be a very adequate means for procuring an analysis of content. A further series of experiments which I performed with two of these observers, A. and D., exposing the stimulus-words with a card-changer and measuring the reaction-time by a chronoscope, resulted in a reduction of the average time to 1.1" and .8", respectively, without any corresponding diminution in the content of the experiences, or in the observer's ability to analyze it. This, we may note in passing, accords well with the results obtained by Hillgruber, and reported by Ach,<sup>7</sup> to the effect that more efficient intellectual work may be secured under the stress of a quick reaction, than when the observer selects his own time for the procedure.

It may not be concluded, however, that thought-experiments of the

<sup>7</sup> *Zsch. f. Päd. Psychol. u. Exp. Päd.*, 1913, 14, page 1.

Bühler type have no scientific value. On the contrary, the results secured, even with such comparatively untrained observers as were here engaged, indicate many important facts regarding the course of thinking and the nature of the relations involved in the thought-process. What we have not secured from them in the experiments at hand is an adequate description of the content which was experienced.

In order to make the distinction between these two types of report more clear, and at the same time to indicate their respective values as scientific data, I have selected for further consideration two parallel reports of each observer, one from series III. and one from series V.:

Observer A., III., 15, *Salé*, 8.6".—First, the noun, sail, on ships, to catch the wind—used on small boats. Second, thought reference to the church hymn: "We'll sail the wide seas,"—seemed rather amusing. Third, image of some sort of small boat, possibly a picture of a yacht—white sails. Conscious of the act of sailing, impression that the boat was going from right to left across the field. Also conscious of the part of the yacht which is below the water.

Secondary introspection:<sup>8</sup> Can't base the amusement; due, probably, to a general habit or attitude. Just at last, thought of it as a verb. No reference to *salé*. The duration seemed longer.

This report indicates three principal moments. It is not purely descriptive, but description is clearly in evidence. The notion of something-on-ships-to-catch-the-wind is the characteristic of the first moment, and it appears to have been imageless. The second moment was probably verbal and affectional. The third was imaginal, though not entirely so, for the act of sailing and a sense of direction were involved. The reference to the portion of the boat below the water-line is also notional. The fact that "small boat" occurs in both the first and third moments, indicates the probability of a relation which was not entirely disrupted by the irrelevant second moment. It also calls in question the exact line of demarcation between the first and third moments. They appear to have become somewhat mixed in the introspection.

Observer A. V., 7, "How fruitful is modern philosophy, for she is constantly coining new terms," 11.8".—After, or during, the first part I seemed to go to work on it. As a basis I had a very general view of the schools of modern philosophy beginning with Kant—references to Hegel and Fichte, and general reference to all modern philosophies. Even then I did not see the object of such a statement (regarding) just the first part. I doubted if it would come in this class. All thought was cut off by the second part, but there were still tendencies to refer back—an attitude. Disturbed by the intention to be funny. I knew it was funny, but it did not strike me. Just at last came the thought that modern philosophy is fruitful, but not because it coins so many terms.

Secondary introspection: Tendency to deny what the statement implied.

<sup>8</sup> The secondary introspection was drawn out by questions of the experimenter.



This report does not reveal specific notions or images, but there is an indication of the thinking-process involved in the abrupt disjunction of the first and second parts of the statement, and the tendencies to relate the second back to the first. The complex "thought" of the schools of modern philosophy which attached to the first part, and the disturbance due to the "intention to be funny" which the second part introduced, are characteristic of the mental work which was accomplished. The whole culminates in a judgment which cuts the Gordian knot in its failure, or refusal, to take cognizance of the irony which was implied. As to the nature of the images or simple notions which may have been present, we have no evidence.

Observer D., III., 93, *Elk*, 0.8".—Familiarity with the word. Visual image of the word, then of a pair of antlers. I thought I knew what the meaning of the word as attached to antlers was. Thought of an Elk as a member of that lodge—tendency to look in that direction. Recalled a person who is an Elk. No image.

Here the central feature of report is two visual images. The thought that "I knew what the meaning of the word as attached to antlers was" may have been merely a feeling of familiarity. The thought-of-an-Elk-as-a-member-of-that-lodge appears to be a notion which provoked the tendency to look in the direction of the local Elk's lodge, and associated another notion of a person who was an Elk. The fact that this last combination of notions and direction-tendency were reported without imagery is significant, since the first appearing facts were images.

Observer D., V., 24, "Beware of the man whose God is in the skies," 5.4".—Many associations attributable to reading. I did not see the meaning at first. Then it occurred: Beware of such a man because such a God has not much to do with his life. Then reference to a man whose religion and morality are separate. Associated at the time of reaction a remembrance of reading somewhere: If a man comes to your house and tells you he sees no distinction between virtue and vice, put your spoons away.

Secondary introspection.—There was a reference to the Greeks as having their religion and morality separate. This was condemned offhand, because I had considered it in the past as a result of class discussion and reading. Morality and religion are not necessarily the same, but they go hand-in-hand.

Here again we have largely "Kundgabe," rather than content. We can see, however, that the meaning was mainly attributable to associative references which were familiar, and more or less explicitly reproduced. As to the nature of this reproduced content, again, there is no evidence.

Observer V., III., 44, *Stole*, 1.8".—First, the verb, something taken, not clearly carried out, but recognized as theft. Second, as applied to the garments of the clergy. Vague image of a clergyman in his robes. It might have been Mr. W.—, a tall man in a green stole. The green stole is the one used at this season of the year. This fact was recognized.

The contents here are primarily two, the first notional, the second imaginal. It is not impossible that the notion may have had a verbal vehicle. The recognition that "the green stole is the one used at this season of the year" is, perhaps, more evidentially notional, though even here it might be contended that a feeling of familiarity and appropriateness would exhaust the actual content of the experience.

Observer V., V., 22, "Decency is indecency's conspiracy of silence," 12". —I take it to mean that indecency affects decency to cover up its own defects. Do not quite understand what conspiracy of silence. A show of decency will cover up indecency. There came the thought: "A prude is a female going about looking for temptations to resist."

Secondary introspection: It seemed a rather clever putting of words.

The understanding of this statement was apparently assisted by the revival of an analogous "thought." There is also indicated the stumbling-block which "conspiracy of silence" provoked. This was evidently not clearly worked out. There was an impression that the statement was apt and clever, without a full understanding of its meaning. The evidence as to content is again lacking.

Observer O., III., 44, *Ghost*, 4.6".—Clear consciousness of spelling, *gh* prominent. Word visualized as if lettered by hand. Reference to one of my extension lectures on "Ghost Hunting." It seemed as if many associations or thoughts might develop here, but none was indicated. Association with Palladino, and reproduction of her picture in the *New York Times*, Sunday. Came back to word. Thoughts and images of the ghost-hands in Palladino's séances.

We have here three moments. The first was a visual verbal image. The second reference was apparently notional, though it may have been verbal. An expectancy which it evoked failed to be realized. The last moment is confused, but involves a definite visual image.

Observer O., V., 21, "The final aim of science is concrete prevision," 13.6". —Understood immediately as being able to predict things. Question: Why *concrete*? Without much interruption, it became indicated that science was not a generalization or speculation; that, given certain materials, the aim of science was to tell what would happen to them when you put them together.

First we have an indication of general understanding which is, however, arrested by the use of the word "concrete." This led to a further process which eventuated in a more complete understanding. No descriptive contents are indicated.

It may be concluded that these parallel cases show markedly different attitudes and results. The reports of series III. aim to be descriptive, and in large measure achieve this aim. Those of series V. are informational, and deal with complex thoughts without detailed analysis. Both have their scientific value, for while the first method secures a description of content, it fails by its simplicity to

provoke any sustained thinking. The second method secures such thinking, and gives evidence as to thought-relations and their dependence upon associations, but it fails to describe the contents involved. In short, the one method complements the other. Of course, it is not impossible that more expert observers might also secure a description of content with the second method, yet the difference in attitude is apparently so profound that we should perhaps do well to rest our analyses of content for the present upon those briefer moments which can be more adequately inspected.

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## DISCUSSION

### CAN SCIENCE SPEAK THE DECISIVE WORD IN THEOLOGY?—A REJOINDER

IN a recent article, under the above title, Dr. Cooley<sup>1</sup> takes issue with a thesis I maintained in a paper read at the last session of the American Philosophical Association. In his own words, my thesis is that "Psychology is competent to reach trustworthy *scientific* conclusions regarding the *objects* of theological inquiry."

It is essential to the understanding of the present discussion that "objects" of theological inquiry should be taken to mean not the Absolute of the metaphysicians, but *the Gods of the historical religions*, i. e., persons in direct anthropopathic communication with men. That is the sense I gave to that word in my paper. The God meant and addressed in the Christian prayerbooks of every denomination, as well as the gods of the barbarians, are of another species than the God of the Gifford lecturer. Any one in doubt regarding this difference need only ask himself what would remain of our church practises and of our Christian dogmas were they intended for our philosophers. How instructive would be a Christian book of common worship, prepared by and for those distinguished metaphysicians who are looked upon, with or without their consent, as champions either of the Christian religion, or of religion pure and *undefined*!

Dr. Cooley's argument runs thus: Religious experiences are "essentially secret and private"; they have in each case but one observer, and so but one reporter. They are facts, but not facts the observation of which is open to correction through the common inspection of many

<sup>1</sup> This JOURNAL, Vol. X., page 296.



investigators. "The psychology of religion does not possess, and seemingly can never possess, a body of critically determined and recognized *facts*, in the scientific sense." Therefore, in that field, no conclusion can have a coercitive value. Psychology is not "competent to pronounce as to the objective actuality of the *objects* with which religious experience is concerned." Let us put the argument in the syllogistic form:

Every science possesses necessarily a body of facts recognized, in one and the same meaning, by all the specialists in that science.

There can be no such body of facts in the field of religion, for religious experiences are secret and private.

Therefore, no scientifically established generalization is possible in that field.

Before proceeding to show the falsity of the minor premise of this syllogism, I beg leave to say that I do not know of any contemporary psychologist ever making the affirmation it contains. Those who have urged it have been men unfamiliar with the methods and the achievements of recent psychology. A psychologist but little acquainted with the phenomena of religion might, indeed, hold that *at present* there is no sufficient body of generally acknowledged data, but would not say that there *can not* be. He could not say that without implying either that no part of conscious life is amenable to scientific treatment, or that religious life is a sphere of existence of another kind than the rest of conscious life. But, either horn of this dilemma is unacceptable, so far as I know, to the psychologists.

Concerning what he calls "ordinary normal psychology," Dr. Cooley writes that there are abundant indications that the functioning of the vast multitude of individual minds, especially those of the same race, are remarkably alike—sufficiently so to be subject to safe generalizations." He admits thus the existence of a scientific psychology. If he excludes the religious life from the possibility of scientific treatment, it is only because "in religion, on the contrary, the indications make strongly for the conclusion that different minds function in a great variety of ways—in such ways, indeed, that one man is often quite at a loss to understand the religious life of another." This variety of ways seem to him so infinitely great that not only is there *at present* no sufficient visible uniformity and regularity to make possible generalizations, but no amount of observation and comparison on the part of psychologists is likely ever to make possible a generally accepted classification and description of the facts of religious life!

I confess that I do not see how a forecast as hopeless as his should be possible to any one acquainted with the history of any science.

Dr. Cooley affirms now of the psychology of religion what might have been said, and no doubt was said, of every science, at its inception. How can one make such an affirmation to-day with text-books of psychology in the window of every bookshop, and illuminating (if not final) treatises on topics as difficult as hysteria, multiple personality, dreams, insanity, etc., on the shelves of every university library? If Dr. Cooley had been content to say that generalizations in the field of religious experience are premature, one might be patient with him. But "the subject matter of the psychology of religion" yields, in his opinion, no promise of such an achievement, and he sees no hope whatsoever of the psychology of religion ever becoming "in any measure an applied science."

My studies in this field have led me to an altogether different opinion from the one entertained by Dr. Cooley. The religious life does not appear to me as a chaotic world, without regularity and uniformity. On the contrary, I see that, though highly complex, religious life has yielded already a quite definite series of facts, described with considerable uniformity by those who work in that field. Religious experiences are "private and secret?" Just as much so and no more than any other "inner" experience; just as much, for instance, as the emotional life. Is it not well known that many mystics have left detailed records of their experiences and that these records are in substantial agreement, even those of the Christian with those of the Hindu mystics? Similarly of conversion, there are extant many well-described conversions, and the number of recorded instances can be added to almost at pleasure. As a matter of fact, a large number of carefully observed cases have been gathered and many of them are in print. They constitute a valuable set of "recognized facts in the scientific sense," characterized by important and well-marked common features. There is also a very high degree of uniformity in the description of the fruits of religion, as made by its votaries. Of this, I provide, I think, a satisfactory demonstration in the documents to be found in my book.<sup>2</sup>

The preceding remarks can be convincing only to those who are familiar with the literature on these subjects. But every one knows at least of the uniformities of *belief*. The creeds of the various Christian churches, different as they may be, contain, nevertheless, a common core. Does not this common element point to fundamental uniformities in Christian religious experience? It is too late to say that the essential features of the several aspects of religious experience can not be discriminated and set forth with the definiteness and

<sup>2</sup>"A Psychological Study of Religion," pages 212-233.

uniformity required of a body of facts from which scientific conclusions are to be drawn.<sup>3</sup>

I claim no more than a degree of agreement among authorities, regarding many phases of these experiences, sufficient to warrant conclusions deserving to be called scientific. I add that here, as in any other science, agreement waits upon investigation.

For the rest, the chief purpose of my New York paper, and of the chapter of my book<sup>4</sup> from which that paper is drawn, was not so much to affirm the competency of psychology to reach trustworthy scientific conclusions regarding the Gods of religion, as to oppose the claim of the most powerful—the only powerful—theological movement of the time. My main affirmation was concerning *that which is impossible to theology without psychology and without metaphysics*. Though they reject the assistance of metaphysics and rely solely upon “inner experience,” these empirical theologians think that they may continue in the assurance of the objective existence of a God in direct communication with man. But they have thus, apparently unbeknown to themselves, made of their God-idea an hypothesis open to scientific verification. Why then should they deny the right of science to pronounce upon the validity of their hypothesis? Have they not made of theology a branch of psychology?

I can not conclude without indicating the bearing upon the theology of inner experience of Dr. Cooley’s argument against psychology. If he is right in his contention, then, that theology, and the psychology of religion, would be equally impossible; there could be only *private* theological opinions. When he asks, “What kind of an emotional experience and what amount of it is reliable indication of a supersensible and superhuman stimulus? What kind of intuition and what degree of it warrants one in thinking he has seen God?” he raises difficulties, which, if real, are just as fatal to empirical theology as to the psychology of religion.

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<sup>3</sup> The orderliness and the uniformity of many facts of the religious life, and the agreement among psychologists regarding these facts, will be set forth, I hope convincingly, in a volume I am now preparing on the “Contents of Religious Experience.”

<sup>4</sup> *Ibid.*



## REVIEWS AND ABSTRACTS OF LITERATURE

*Der vorchristliche Jesus.* WILLIAM BENJAMIN SMITH. 2te Auflage mit Vorwort von PAUL WILHELM SCHMEIDEL. Jena: Eugen Diederichs. 1911. Pp. xxix + 243.

The first edition of this work was published in German in 1905, and since then the author's thesis has received widespread attention all over the christian world. That an American mathematician writing from Tulane University, where Smith is a professor, should defend a thesis in opposition to a whole army of higher critics and receive such widespread, and, on the whole, serious attention from a score or more of them, speaks well for American scholarship in this field.

The kernel of the five essays in the book can perhaps be presented as follows: The original doctrine concerning Jesus, a divinity who emancipates, protects, and heals, was the belief and teaching of a prechristian cult which, between the years 100 B.C. and A.D. 100, more or less enveloped in secrecy and "mysteries," was widespread among the Jews and especially among the Greeks. This doctrine was the original source of christianity, which arose, consequently, from many centers, and not, as a later tradition maintains, from the single center of Jerusalem. Jesus was called "the Nazarene," not from the city of Nazareth (which did not exist at that time), but from the Hebrew meaning of the root of the word, "the keeper" or "guard." His *anastasis* meant originally his installation as "Messiah," "World-Ruler," "Judge of the living and the dead," and so forth; and this was later, by the addition of the supplementary phrase "from the dead," changed into the resurrection. The "two great ideas," the one, imposing, preached by John the Baptist and others, of "One who shall come," and the other, milder and more genial, "of Jesus," were originally different, but were finally united in the world-conquering concept of Jesus Christ. The idea of the seed-sower had to do originally with God's sowing the seeds of the Logos which produced the world, a picture of the origin of the world possessed by prechristian Naasenes (erroneously considered by some to be merely a sect of the christian gnostics). No one knew of Paul's letter to the Romans until the year 160 A.D.

Smith writes, "The Jesus-cult is an historical fact, and indeed the most important historical fact there is for us. In the gospels the Jesus-concept is dominant, and in the other writings of the New Testament the Christ-idea is subordinate to it. . . . Orthodoxy or conservatism says that Jesus was god-man, *echter Gott und zugleich echter Mensch.*" For science, however, this notion remains an unthinkable *Unding*. To explain Jesus there are for science but two possible hypotheses. "Either Jesus is a deified man, or he is a humanized god. Like the undulatory theory of light, the first hypothesis is now a very highly developed concept. On it, especially in Germany, three generations of scholars, among them men of genius, have labored with unfaltering zeal. With what result? One must confess, with a negative result. In short, the attempt to explain the appearance of the Jesus-cult, the new gospel, and the chris-

tian propaganda by any conceivable idea of a purely human Jesus, has, in the light of historical criticism, in no respect and in no degree, succeeded. The complete failure of this noble, century-long effort becomes daily more and more obvious. . . . If it were possible to explain the facts in accordance with this hypothesis, German science would long since have done it. . . . I challenge the higher critics to mention a single crucial fact of original christianity which is satisfactorily explained by their theory. . . . The problem can never be solved in this way. . . . Hence we must assume that Jesus is a humanized god, and carefully test whether on the basis of this assumption a view free from contradictions, in which all is in order, can be developed. This is the only scientific method. In it alone can we hope for a final solution of this most important and most interesting of all historical problems." And Smith goes on to maintain that christianity will lose nothing and gain in every way by such a solution.

In the preface of the first edition, Schmeidel announces himself as an opponent of Smith's views, but vouches for the author's scholarly abilities and thorough methods, saying it will be difficult to refute Smith's conclusions. Soon after its publication, however, in a work entitled "Ist das 'liberale' Jesusbild Wiederlegt?" Weinle spends much ink in saying, with very little grace, that Smith does not know what he is talking about. In Drews's "Christusmythe" Schmeidel is criticized for writing the preface to such a book; and Johannes Weiss, in "Jesus von Nazareth Mythos oder Geschichte," writes that Schmeidel "might have done better than, by writing a preface, supply this book with a foil." Schmeidel, in a later article, pleads that he only wished to call the attention of his colleagues to the views of Smith and those who sympathize with him. Pfeleiderer, Borinski, von Schnehen, Soltau, Meyboom, Vollmer, Vexler, Picard, and many others have given the book serious attention, some confessing that Smith is no dilettante, that his views must be taken seriously and that they are conceived and presented in the spirit of a profound scholarship. Wernle speaks of "*diesem kaum ernstzunehmenden Buch,*" and by innuendo even casts aspersions on Smith's sincerity. Smith, however, in courteous and cogent replies, gives his critics, as it seems to the present writer, far better than he gets—and the contest is interesting. The many criticisms of the book have not given the author reason for modifying the original text in this second edition.

Meanwhile the discussion has been taken up by liberal journals in this country, Volume XV., for example, of the *American Journal of Theology* containing several articles dealing with different phases of the question.

Smith's method may be exemplified by his treatment of Acts 18: 24-28, where the text seems clearly to imply that an eloquent Alexandrian Jew named Apollos, who was "instructed in the way of the Lord," but "knew only the baptism of John," first learned from Aquila and Priscilla at Ephesus that the "Lord" was the historical Jesus. Thereafter, "he mightily convinced the Jews, publicly, shewing by the scriptures that Jesus was the Christ."

The importance of the book is evident in the fact that a general ac-

ceptance of its thesis would involve a radical revision of traditional views as to the origin of christianity, and the author writes with the clearness and logical force of one who knows his ground and is willing to tell all that he knows on a great theme.

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*The Higher Aspects of Greek Religion.* L. R. FARNELL. New York: Scribners. 1912. Pp. 155.

These six Hibbert Lectures were delivered at Oxford and in London in April and May, 1911, and bear the following captions: (1) "General Features and Origins of Greek Religion"; (2) "The Religious Bond and Morality of the Family"; (3) "Family Morality (continued): Tribal and Civic Religion"; (4) "Influence of the Civic System of Religion upon Religious Thought, Morality, and Law"; (5) "Expansion of Greek Religion beyond the Limits of the Polis"; (6) "Personal Religion in Greece."

Readers familiar with Dr. Farnell's admirable work, "Cults of the Greek States," will not need to be told that he is a scholar of conservative temper, accustomed to weigh evidence, and disinclined to substitute hypothesis for ascertained fact except when duly acknowledged. In these days of somewhat wild speculation in matters connected with religion which flourishes under the guise of historical research, it required courage bordering on temerity to pronounce in Oxford and Cambridge, the seats of the most speculative exchanges, discourses so severely and studiously tame as those contained in this volume. Dr. Farnell, to be sure, possesses not only the courage of his convictions, but also a reputation for sound scholarship sufficient to warrant him in thus bearding the lions.

Moreover this mode of treatment is not a manner assumed for effect but the natural expression of the author's fundamental conception, which agrees with the traditional view in holding that Greek religion was mainly a social-political system and that such traces as undoubtedly exist of animism, magic, or initiation-rites, are not of its essence, but more or less adventitious survivals or accretions. Although but yesterday generally accepted, so rapidly have the revolutionists been making headway that to-day it sounds rather heretical to say that Greek religion "is in its earliest period a 'theistic' creed, that is, a worship of personal individual deities, ethical personalities rather than mere nature forces," and that anthropomorphism is its predominant bias. Doubtless those who think otherwise incline to regard Dr. Farnell's views as biased by his preoccupation with the state cults and the Olympian deities to whom they are addressed and his frank subordination of private cults. It is only in the last chapter that he touches on the mysteries, and even then it is the Eleusinian, the most nearly fully adopted by the state of all mysteries, with which he is chiefly concerned. This objection, however, may readily be too much pressed; for if one takes a large view, as Dr. Farnell evidently conceived it his duty to do, it is undoubtedly true that the public cults of the several states, not only by their public character



reveal their prominence, but also in the total evidence bulk largest, and therefore deserve first attention in a general survey.

To be sure, "personal religion" is far more in keeping with modern conceptions of religion, and there have not been wanting those who would refuse the name of religion to the Olympian worships with their large admixture of festive cheer and local patriotism. But surely puritanism and pietism are not the only forms of religion. Again, it is the less generally known forms of cult, as of other things, that naturally engage the attention of the specialist; and it is therefore difficult for the specialist to preserve a due sense of proportion in assessing the relative historical values of that which is so well known as to be trite (but not therefore less true) and of that which requires to be disclosed by elaborate research and painstaking reconstruction. This balance Dr. Farnell has endeavored not without success to maintain. To have done so in the brief compass of six lectures is no mean achievement. The special student of Greek religion will, of course, find little in the present book to interest him, except the author's matured judgment on several large questions and his evaluation of the several factors as indicated by the distribution of emphasis; but the general reader will, therefore, be able with the greater confidence to use it as a safe guide to a subject justly claiming the attention of thinking men.

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*A First Book in Psychology.* MARY WHITON CALKINS. Third revised edition. New York: The Macmillan Company. 1912. Pp. xix + 426.

In presenting the third edition of this book the author has taken occasion to introduce certain revisions (chiefly by way of added and transferred portions) calculated to stress the social nature of the self, to emphasize the study of behavior, and to eliminate expressions suggestive of atomistic psychology. These changes are all in the direction of genuine improvement. Changes in conception in the discussions of attention, volition, and time, are also pointed out. A bibliographical supplement is added. The characteristic appendix (139 pages) is retained.

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## JOURNALS AND NEW BOOKS

ARCHIVES INTERNATIONALES DE NEUROLOGIE. January, 1913. *Syndrome paralysie générale subaigu; récédive à l'occasion d'une grossesse* (pp. 1-7): HENRI DAMAYE.—An account of a case of paresis partially cured by therapeutics, and in which a subsequent pregnancy caused a relapse followed by a fatal issue. *Le pouls des aliénés* (pp. 7-10): PROFESSOR SIKORSKY.—In each normal person, the pulse is character-

istic; and, as well as handwriting, constitutes a permanent feature of the individual. To each type of mental disorder there also corresponds a unique pulse, which synthetizes the symptoms of the psychosis. *Les trois "visions" de Benvenuto Cellini* (pp. 11-25): GEORGES VARENNE.—The three visions of Benvenuto Cellini were manifestations of a transitory psychosis, of hysterical origin. *Réforme du règlement de 1857 sur le service des aliénés* (pp. 25-35): DR. LEGRAIN.—The regulations now in vigor in insane asylums ought to be modified. The capital aim of these institutions ought to be the cure of the inmates. *Sur les relations entre traumatismes crâniens et maladies mentales et nerveuses* (pp. 35-40): F. W. MOTT.—Cranial traumatism may give rise to various psychoses, such as Korsakoff's. It is not easy, however, to tell how far the psychosis is due to the trauma and how far to the previous mental condition. *Revue des Sociétés. Analyses bibliographiques.*

REVUE DE MÉTAPHYSIQUE ET DE MORALE. January, 1913. *Sur les méthodes de la grammaire comparée* (pp. 1-15): A. MEILLET.—The author describes the method of reasoning of the comparativists and shows its logical limitations. *Le rythme du progrès et la loi des deux états* (pp. 16-60): L. WEBER.—A criticism of Comte's law of the three stages, substituting for it a sort of "binary rhythm" in which periods of speculative and of technical activity predominate in turn. *La nature de l'espace (fin.)* (pp. 61-100): CH. DUNAN.—The author examines the conceptions of space of Leibnitz and Kant and shows how mathematics points to the nativistic conception of space. *Note sur le sens équivoque des propositions particulières* (pp. 101-106): S. GINZBERT.—No definition of "some" is wholly satisfactory. "Reasoning becomes precise only at the expense of suppleness and inversely." *Études critiques. Les étapes de la philosophie mathématiques*: P. BOUTROUX. *Questions pratiques. La température*: TH. RUYSEN. *Supplément.*

Bosanquet, Bernard. The Distinction between Mind and Its Objects. Manchester: University Press. 1913. Pp. 73. \$0.36.

Hadley, Arthur Twining. Some Influences in Modern Philosophic Thought. New Haven: Yale University Press. 1913. Pp. vii + 146.

Jerusalem, Wilhelm. Einleitung in die Philosophie. Funfte and Sechste Auflage. Vienna and Leipzig: Wilhelm Braumüller. 1913. Pp. xiv + 402. 7 M.

Jevons, F. B. Personality. New York and London: G. P. Putnam's Sons. 1913. Pp. vii + 172.

Santayana, George. Winds of Doctrine: Studies in Contemporary Opinion. London: J. M. Dent and Sons. New York: Scribners. 1913. Pp. 215.

Wilm, E. C. The Problem of Religion. Boston: The Pilgrim Press. 1912. Pp. xii + 240. \$1.25.

Woods, Frederick A. The Influence of Monarchs. New York: The Macmillan Company. 1913. Pp. xiii + 422.

## NOTES AND NEWS

"A JOINT session of the Aristotelian Society, the British Psychological Society, and the Mind Association was held on June 7 and 8 at University College, London, and Crosby Hall, Chelsea. The first meeting consisted of a symposium, 'Are Intensity Differences of Sensation Quantitative?' by Dr. C. S. Myers, Professor Dawes Hicks, Dr. H. J. Watt, and Dr. William Brown, under the chairmanship of Professor Spearman. Dr. Myers showed that the 'all or none' principle is obeyed by all kinds of reflexes and all kinds of sensibility. The type of reaction is therefore the correlate of quality of sensation and the difference of degree—moreness or lessness of the same reaction is the correlate of difference of intensity of sensation. The second and third meetings, presided over by the Hon. B. Russell, were devoted respectively to a discussion on memory and consciousness, opened by Dr. Robinson, and to a symposium, 'Can There be Anything Obscure or Implicit in a Mental State?' by Mr. H. Barker, Professor G. F. Stout, and Professor R. F. A. Hoernle. Dr. Robinson said that M. Bergson, in his 'Matter and Memory,' neglected the fact that memory was an assertion, and that he did not do justice to the function of meaning in remembering. Intuition and intelligence must be somehow inclusively related. A vigorous discussion revealed many criticisms opposing this anti-Bergsonian thesis. In the symposium Professor Stout maintained that within the field of consciousness, whether of mere sense experience or of thought, there are contents which are not separately discerned. The opposing point of view to this was due to a confusion resulting from the fact that the presence of implicit consciousness can only be ascertained by a process of analytic scrutiny rarely present in normal conscious life."—*Nature*.

THE Académie Française has awarded the Grand Prix Broquette Gonin, of the value of \$2,000, to Professor Grasset, of Montpellier. The prize is for "the author of a work, philosophic, political, or literary, which shall be judged to be of a nature to inspire the love of the true, the beautiful, and the good." Professor Grasset, who is known for his researches on the nervous system, is also the author of several works on questions of psychology, moral responsibility, and the philosophy of practical life.

DURING the leave of absence for the next academic year of Professor Wendell T. Bush, courses in philosophy will be given at Columbia University by Professor Norman Kemp Smith, of Princeton University, and Professor Harry Allen Overstreet, of the College of the City of New York. The Reverend Father Cornelius Clifford, Rector of St. Mary's, Whippany, New Jersey, will also be a non-resident lecturer during the first half-year, offering a course on Scholasticism.

PROFESSOR HENRI BERGSON delivered his inaugural address as president of the Society for Psychical Research on Wednesday, May 28, in the Æolian Hall, New Bond Street. M. Bergson took as his theme a study of the nature of the prejudices against the work and methods of the society.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### IMAGE AND AFFECTION IN BEHAVIOR<sup>1</sup>

#### I

IN the thesis which I recently advanced<sup>2</sup> I had scant time to discuss two topics, which may seem to many to be stumbling-blocks in the way of a free passage from structuralism to *behaviorism*.

The first of these, and by all odds the more serious of the obstacles, is the "centrally aroused sensation" or "image." If thought goes on in terms of centrally aroused sensations, as is maintained by the majority of both structural and functional psychologists, we should have to admit that there is a serious limitation on the side of method in behaviorism. Imagery from Galton on has been the inner stronghold of a psychology based on introspection. All of the outer defenses might be given over to the enemy, but the cause could never be wholly lost as long as the pass (introspection) to this stronghold (image) could be maintained.

So well guarded is the image that it would seem almost foolhardy for us to make an attack upon it. If I did not perceive certain signs of weakening on the part of the garrison, I think I should agree with Professor Cattell that I am becoming too radical, and that I should better admit the claims of imagery and try to work out a scheme for behaviorism which will embrace the image. Suppose we consider this aspect of the question first: Does the inclusion of the image weaken the claims of the behaviorist? I am ready to admit that it does. Take a case like that ordinarily urged. Some one suggests in words that I borrow one thousand dollars and go abroad for a year. I think over the situation—the present condition of my research problems, my debts, whether I can leave my family, etc. I am in a brown study for days, trying to make up my mind. Now

<sup>1</sup> An address given before the Psychological Seminary of Columbia University, April 3, 1913.

<sup>2</sup> "Psychology as the Behaviorist Views It," *Psychological Review*, March, 1913.

the train of thoughts going on in my mind, according to the upholders of the image, has no adequate behavior counterpart while it is in transit. The behaviorist, observing me, might note that my appetite had departed, that I was smoking and drinking more than usual, and that I was distraught. Finally, experimental tests might show that my ability to make fine coordination had been seriously interfered with, that my dynamometric threshold was lowered, and so *ad infinitum*. The introspectionists would say that all of these tests failed to give anything like a complete record of my "mental content" or of the "totality of conscious processes." Indeed, they would urge that such tests have only an analogical reference. Only direct observation of the mental states themselves by the method of introspection will ever tell whether I am grieving over past sins or whether I am really trying to reach a decision about going abroad! If we grant this, and such an impulse is very strong, the behaviorist must content himself with this reflection: "I care not what goes on in his so-called mind; the important thing is that, given the stimulation (in this case a series of spoken words) it must produce response, or else modify responses which have been already initiated. This is the all-important thing and I will be content with it." In other words, he contents himself with observing the initial object (stimulation) and the end object (the reaction). Possibly the old saying "a half loaf is better than no bread at all" expresses the attitude the behaviorist ought to take; and yet I for one dislike to admit anything which may be construed as an admission of even partial defeat.

Feeling so, I prefer to attack rather than to remain upon the defensive. I spoke above of certain signs of disaffection and mutiny among the ranks of the faithful. These signs manifest themselves in three different ways: (1) The attempt on the part of Woodworth, Thorndike, and others to question the dogma of the image and to show that thought processes may go on independently of imagery—or, indeed, as I understand it, even independently of peripherally initiated processes. To this last contention I do not accede, as I shall undertake later to show. It is needless for me to discuss this phase of the problem at any length before this laboratory. (2) The failure on the part of the most earnest upholders of the doctrine of the centrally aroused sensation to obtain any objective experimental evidence of the presence of different image-types. I refer here to the researches of Angell and of Fernald. I think this admission paves the way for the complete dismissal of the image from psychology. Furthermore, I believe that most psychologists are willing to admit that introspection furnishes no guide for the determination of one's own image-type. In this field, above all others, introspec-

tion, if it is a legitimate method at all, ought to yield its best results. It is just here that it has failed, except in the case of a few fortunate men who seem to have become adept in the use of it. We who are less happy in its use must forever do without this wonderful Aladdin's lamp which, upon demand, illumines the dark places of the human mind. (3) The attempts even of the structuralists to reduce the so-called higher thought processes to groups of obscure organic processes. I have in mind the recent work on recognition, abstraction, etc.

All of these tendencies, initiated by the psychologists themselves, lead directly over to my principal contention, viz., that there are no centrally initiated processes.<sup>3</sup>

The environment in the widest sense forces the formation of habits. These are exhibited first in the organs which are most mobile: the arms, hands, fingers, legs, etc. By this I do not mean to imply that there is any fixed order in their formation. After such general bodily habits are well under way, speech habits begin. All of the recent work shows that these reach enormous complexity in a comparatively short time. Furthermore, as language habits become more and more complex there arise associations (neural) between words and acts. Behavior then takes on refinement: short cuts are formed, and finally words come to be, on occasion, substituted for acts. That is, a stimulus which, in early stages, would produce an act (and which will always do so under appropriate conditions) now produces merely a spoken word or a mere movement of the larynx (or of some other expressive organ).

When the stimulus produces either an *immediate overt response* (as, for example, when I tell John to go to the sideboard and get an apple, taking it for granted that he goes), or a *delayed overt response* (as, for example, when I ask an engineer to think out and make an apparatus for the conversion of salt water into sweet, which may consume years before overt action begins), we have examples of what one may call *explicit behavior*. In contrast to behavior of this type, which involves the larger musculature in a way plainly apparent to direct observation, we have behavior involving only the speech mechanisms (or the larger musculature in a minimal way; for example, bodily attitudes or sets). This form of behavior, for lack of a better name, I will call *implicit behavior*.<sup>4</sup> Where explicit behavior is delayed (*i. e.*, where deliberation ensues), the intervening

<sup>3</sup> I may have to grant a few sporadic cases of imagery to him who will not be otherwise convinced, but I insist that the images of such a one are sporadic, and as unnecessary to his well-being and *well-thinking* as a few hairs more or less on his head.

<sup>4</sup> It may be said in passing that the explicit and implicit forms of behavior referred to throughout the paper are acquired and not congenital.



time between stimulus and response is given over to implicit behavior (to "thought processes").

Now it is this type of implicit behavior that the introspectionist claims as his own and denies to us because its neural seat is cortical and because it goes on without adequate bodily portrayal. Why in psychology the stage for the neural drama was ever transferred from periphery to cortex must remain somewhat of a mystery. The old idea of strict localization of brain function is in part responsible. I feel, however, that religious convictions are even more largely responsible for it. I do not mean that the men originally responsible for the transfer were aware of this religious tendency at all. When the psychologist threw away the soul he compromised with his conscience by setting up a "mind" which was to remain always hidden and difficult of access.<sup>5</sup> The transfer from periphery to cortex has been the incentive for driving psychology into vain and fruitless searches of the unknown and unknowable. I am quite sure that if the idea of the image had never taken such firm hold upon us we would never have originated the notion that we are seeking to explain consciousness. We would have been content to study the very tangible phenomena of the growth and control of explicit and implicit habits.

It is implied in my words that there exists or ought to exist a method of observing implicit behavior. There is none at present. The larynx, I believe, is the seat of most of the phenomena. If its movements could be adequately portrayed we should obtain a record similar in character to that of the phonogram.<sup>6</sup> Certainly nothing so definite as this could be obtained, but we should get a record, at least, which would largely reveal the subject's word-habits, which, if I am not mistaken, make up the bulk of the implicit forms of behavior.

Now it is admitted by all of us that words spoken or faintly articulated belong really in the realm of behavior as much as do movements of the arms and legs. If implicit behavior can be shown to consist of nothing but word movements (or expressive movements of the word-type) the behavior of the human being as a whole is as open to objective observation and control as is the behavior of the lowest organism.<sup>7</sup>

<sup>5</sup> The tendency to make the brain itself something more than a mechanism for coordinating incoming and outgoing impulses has been very strong among psychologists, and even among psychologically inclined neurologists.

<sup>6</sup> I have been trying to find out whether any of the spoken phonographic records can be read by experts in that work. I have not been able to ascertain this information, but I am sure there is nothing inherently difficult about the problem. Records of laryngeal movements could likewise be read directly.

<sup>7</sup> It is implied here and elsewhere in my position that there is no scientific

## II

Affection is the other stumbling-block in the way of our main thesis. It is needless for us to enter into a lengthy discussion of the various views about affection. It is sufficient to call attention to the generally accepted position that affection is a mental process distinct from cognition. Both Angell and Titchener in this country admit the independence of the two. In Germany, likewise, with the exception of the followers of Stumpf, the independence is admitted. Indeed, as is well known, Wundt and his pupils are attempting to introduce into affection the same wealth of detail they have already succeeded in bringing into cognition. I refer to the addition to the elemental processes of pleasure-pain, those of strain-relaxation, excitement-calm.

In maintaining his position as to the independence of the two processes, Titchener states that affection and sensation are closely similar in the following respects. Both possess certain common attributes, viz., *quality, intensity, duration*. Sensation possesses the additional attribute of *clearness*, which affection lacks. "The lack of the attribute of clearness is sufficient in itself to differentiate affection from sensation; a process that can not be made the object of attention is radically different, and must play a radically different part in consciousness, from a process which is held and enhanced by attention." Furthermore, the lack of *clearness* distinguishes affection from organic sensation—the cognitive processes with which it is most closely allied. On the whole, while sensation and affection are closely allied, "the difference is so great that we have no choice but to rank affection in human psychology as a second type of mental element, distinct from sensation."

Adherents of the view that affection is merely an attribute of sensation have not been lacking. Külpe has been given credit for demolishing this assumption.

There remains the view in contrast to the one first outlined, advanced principally by Stumpf and accepted and amended by Helen Thompson Woolley, viz., that affection is really organic sensation. The theory as advanced by Stumpf is all but unintelligible in view of the fact that the simplification that he obtains by his reduction is more than offset by the complexity he introduces when he states value (or at most only temporary and provisional value) in self-observation. I sincerely believe that psychology would make far more rapid progress in the next twenty-five years than in all of its previous history, if it would conduct its experiments upon the assumption that the (normal) subject can hear but can not innervate the speech musculature beyond the point of making *silent whispers*. The same result might be obtained by working upon the assumption that the experimenter is deaf.

that the emotions, in addition to the complex of sensations, contain a mysterious "kernel." Mrs. Woolley, while rejecting the "kernel" hypothesis, insists that affection can be identified with sensation. She gives no clear reason for the solidarity and distinctness of the two groups, nor for the rather constant presence of the one or the other of these two groups. Stumpf no more than she meets these two points. My own view—which I advance as a theory, not as something introspectively ascertained or introspectively verifiable—may be stated somewhat as follows. I agree with Stumpf and with Woolley in holding that affection is an organic sensory response. Through lack of evidence, I reject the view that there are special pleasure and displeasure nerves. I admit, from the work of von Frey and that of Rivers and Head, that there are special cutaneous (proprioceptive) nerves which mediate pain. The first question which concerns us is how happens it that organic processes have become integrated into two such well-marked, solid groups known as pleasantness and unpleasantness? As they now stand they are really perceptions (objects) which at times may be examined as other objects, such as hunger, thirst, etc. At times they are as clear, and can be attended to in the same way, as the objects which arouse the exteroceptors. I have no sympathy with Titchener's view that these processes are never clear. It is a plain assumption, and a very weak one, arrived at largely in the interest of obtaining a structural differentiation between sensation and affection. At times these processes occur in conjunction with those from the eye and the ear, and since in certain situations the latter have very great stimulating value, the organic feature is extremely hard to observe. Under these conditions they are to some extent "obscure," as are all other organic processes, such as breathing, activity of the glands, circulation, etc. It is here, possibly, that Titchener gets his evidence for the view that they can not be attended to.

Secondly we are concerned with the question why the affective processes seem to be such constant accompaniments of other processes.

What I shall have to say in answer to these questions will not be surprising to any one who has followed the recent Freudian movement. I may preface my own remarks by saying that I do not follow this movement into all of its extravagances. I nevertheless feel that they have made good their main point concerning the sex references of all behavior. Since my first study of the movement I have been rather surprised that no one has connected pleasantness with the activity of the receptors stimulated by tumescence and unpleasantness with those stimulated by a shrinkage of the sex



organs.<sup>8</sup> To those who have inherent objections to admitting that the esthetic, artistic, and religious sides of life are at bottom sexual, this view will not sound convincing. I shall not attempt to develop the point further at the present time. I find in the hypothesis, however, sufficient reasons for taking the theoretical views (1) that "affection" is mediated by enteroceptors, as is hunger, thirst, etc.; (2) that there should be two well-marked groups of such sense processes which possess the solidarity, distinctness, and unity claimed for them by those who hold that affections are elementary; (3) that one or the other should usually be present—actually serving as "personal evaluators of experience"; (4) that their observation should be easy at times and difficult at others.

This view makes them open, as are all other forms of behavior, to objective investigation. You will tell me that expressive methods have already failed to show any constant physiological processes occurring in conjunction with the examination of "pleasant" and "unpleasant" objects. I have worked for years upon the expressive methods and no one will admit their failure in the past more readily than I. My present feeling is that we have taken our plethysmograms from the wrong organs. Whether there are too many technical difficulties in the way of the objective registration of the many delicate changes in the sex organs (circulation, secretion, etc.), remains for the future to decide.

Having thus summarily dismissed the image and the affective elements, I crave permission to restate the essential contention of the behaviorist. It is this: the world of the physicist, the biologist, and the psychologist is the same, a world consisting of objects—their interests center around different objects, to be sure, but the method of observation of these objects is not essentially different in the three branches of science. Given increased accuracy and scope

<sup>8</sup> The whole area involved in sex functions embraces a much wider zone than that of the sex organs proper. The erogenous areas are in infancy widely distributed throughout the body surfaces. Only gradually does the sex organ come to be looked upon as the focus of sex experience. Even in the case of most adults certain of these primitive zones remain functional, as, for example, the nipples, etc. The receptors lying in such areas are stimulated by the reflex motor processes initiated by the primary stimulus (*i. e.*, the object under observation).

[There are two things which possibly ought to be said in connection with this view. In the first place it is not essential to my contention that the above vague suggestion should be true. *It is essential to our position to have affection reducible to sense processes.* It is even more probable that the mechanism is glandular; that very slight increase in the secretion products gives us the one group; checking, or decreasing the secretion, probably the other. Finally it may be said that such a view is entirely independent of the ultimate fate of the Freudian movement.]

of technique, and the behaviorist will be able to give a complete account of a subject's behavior both as regards *immediate response* to stimulation, which is effected through the larger muscles; *delayed response*, which is effected through the same muscles (so-called action after deliberation)—these two forms comprising what I have called *explicit behavior*; and the more elusive types, such as the movements of the larynx, which go on in cases where action upon stimulation is delayed (so-called thought processes). This latter form of behavior, which manifests itself chiefly in movements of the larynx, but which may go on in (to the eye) imperceptible form, in the fingers, hands, and body as a whole, I should call *implicit behavior*. For years to come, possibly always, we shall have to content ourselves with experimental observation and control of explicit behavior. I have a very decided conviction, though, that not many years will pass before implicit behavior will likewise yield to experimental treatment.

Possibly the most immediate result of the acceptance of the behaviorist's view will be the elimination of self-observation and of the introspective reports resulting from such a method.

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### A NEW ALGEBRA OF IMPLICATIONS AND SOME CONSEQUENCES<sup>1</sup>

THE development of the algebra of logic has done more than emphasize the close relation of logic and mathematics. It has helped to show the possibility of an ideal development of pure mathematics in general, free—or nearly free—from tacit assumptions, parsimonious in its postulates, and absolutely rigorous in its methods of proof. In this ideal development, the algebra of implications, or "calculus of propositions," appears as the organon of proof in general, and hence as the necessary first step. The work of Russell and Whitehead and others has called attention to this method of procedure.<sup>2</sup> It is the logical outcome of the denial that mathematics must appeal to "construction" or any other empirical datum, once its postulates are laid down.

From this point of view, the drawing of conclusions is not a process in which premises retire into somebody's reasoning faculty and emerge in the form of the result; nor is the conclusion obtained

<sup>1</sup> Read in brief before the American Mathematical Society, San Francisco Section, October 26, 1912.

<sup>2</sup> "Principia Mathematica," Whitehead and Russell, intends to exhibit just this development of at least the fundamental branches of mathematics.

through any subtle appeal to the perceptual character of space or of collections of marbles or arrays of fingers. Proof takes place through the collusion of two factors; first, postulates or propositions of the particular mathematical system in hand; secondly, postulates or theorems which state implication relations between premises of that logical or mathematical type and the desired conclusion. A mathematical operation is ideally no more than this: the substitution of the variables or functions of variables of the particular system—say, of cardinal number—for the logical variables in some proposition about implications. This proposition is more than a rule for inference; when the substitution is made, it *states* the implication. The result is the statement of what the variables or functions of the cardinal number system imply—a proposition in cardinal arithmetic. This result is not strictly the theorem to be proved, but only the statement that certain expressions or relations of variables imply certain others. Thus pure mathematics does not seek to prove theorems, but only, in the last analysis, that certain postulates imply certain theorems. And the proposition which states the particular implication relation—in more general form, because its variables have a wider range of meaning—is itself a mathematical proposition, in the algebra of logic.

Pure mathematics is not concerned with the truth either of postulates or of theorems: so much is an old story. But just here a curious reservation seems necessary. Modern geometry—Euclidean or non-Euclidean—is not concerned with the truth either of postulates or of theorems, but it *is* concerned with the fact that the postulates *truly imply* the theorems. It would seem, then, that pure mathematics must concern itself with the *truth* of the *propositions in logic* which state, in general form, the implications in question. Since the logic, also, does not prove its theorems, but only proves that its postulates imply them—that they are true if the postulates are true—this concern is, finally, with the truth of postulates in the logic.

It may be objected that the logic, like any pure mathematics, is concerned only with “mathematical consistency.” If so, it must be borne in mind that the algebra of implications ceases, in a sense, to be pure and becomes applied when its propositions are used in proving anything. Indeed, the attempt to separate formal consistency and material truth is, in the case of the logic, peculiarly difficult. For while other branches find their organon of proof in the logic, this discipline supplies its own. Hence, if this system is formally consistent, but contains a primitive proposition which is materially false, we shall have *false proofs* as well as materially false statements of implications, within the logic itself. Also a materially



false theorem—either truly or falsely implied by the postulates—may, when used as a premise, lead to other false propositions; and when used as a *rule of inference*, to further false *proofs*. Thus a single materially false assumption in the logic might produce a numerous progeny early in life; and a “mathematically consistent” algebra of implications might still contain the basis for false proofs within itself, as well as in other branches.

Whoever has any interest in the rigorous development of pure mathematics may offer as warm a welcome to non-Euclidean geometry as to Euclidean, but can only view with alarm any algebra of logic whose postulates do not accord with the nature of valid inference.

Up to date, various sets of postulates for the algebra of logic have been offered, but all of the noteworthy ones produce mathematically equivalent systems, or systems which accord with the others so far as they go.<sup>3</sup> All of these which are complete contain theorems which have no application to our ordinary processes of reasoning and seem absurd to common sense.<sup>4</sup> The implication which figures in all such systems is what Mr. Russell has called “material implication,” the difference of which from valid inference is undeniable.

The algebra to be proposed in this paper is applicable, in every proposition, to ordinary “sound reasoning,” and it excludes all those

<sup>3</sup> Exception should be made of the system of Mr. H. MacColl, set forth in “Symbolic Logic and its Applications” (see also various articles in *Mind*).

Mrs. Ladd-Franklin’s algebra makes inconsistency or exclusion the fundamental relation instead of implication. Nevertheless, any postulate or theorem of that system can be translated, *e. g.*, into a proposition of “Principia Mathematica,” and *vice versa*, provided the variables in both cases represent propositions. Mrs. Ladd-Franklin urges advantages of her algebra over those based on implication (see “Implication and Existence in Logic,” *Philosophical Review*, Vol. XXI, pages 641–665), but these advantages are psychological and methodological rather than logical.

The system to be proposed in this paper has some points in common with the “formal implication” introduced by Mr. Russell in “Principles of Mathematics” and now included in “Principia Mathematica” (Vol. 1, page 132 and following), but it has also many points of difference. The most notable of these are: (1) Formal implication is based upon “material implication,” and is immensely more complicated than the system to be proposed. (2) In formal implication, the negation of  $(x) : \phi x \supset \psi x$  is equivalent to  $(Ex) : \sim (\phi x \supset \psi x)$ . In the proposed system  $(x) : \phi x \supset \psi x$  is only a particular case of  $p \supset q$  and its negative is simply  $\sim (p \supset q)$ . (3) As a consequence of (2) the proposed system does not treat, *e. g.*, “All men are mortals” as a case of implication,  $(x) : \phi x \supset \psi x$ , but as a relation of class inclusion.

<sup>4</sup> For a partial list of such theorems see “Interesting Theorems in Symbolic Logic,” this JOURNAL, Vol. X., page 239. In that paper the number of such theorems is referred to as “apparently infinite.” That it is actually infinite can be proved.

theorems of material implication which are not so applicable. It has, consonantly, a different meaning of "implies," and proceeds from somewhat different assumptions. For the sake of brevity, this proposed system will be referred to as "strict implication."

In order to make clear the different significance of strict implication from any system of material implication, it is necessary to introduce here some fairly tedious considerations. Material implication was preceded by, and historically grew out of, the "calculus of classes." But the algebra of classes contains an ambiguity which, comparatively harmless in itself, becomes serious when carried over into the algebra of implications.

In the algebra of classes, zero—in the usual notation—denotes the empty class or class with no members—the vertebrate invertebrates or the class of sea-serpents. But there are two kinds of such zero classes. Vertebrate invertebrates are impossible or *necessarily* non-existent: our fauna being what it is, the class of sea-serpents has no members. The class of Mondays that are Tuesdays is necessarily a zero class: the class of fair Mondays is a zero class in any month when it happens to rain every Monday.

Two further facts about the zero class are here worthy of attention. If  $ac' = 0$  (if there are no  $a$ 's which are not- $c$ 's), then all  $a$ 's are  $c$ 's. If  $ac'$  and  $a'c$  are both zero classes, then  $a$  and  $c$  are equivalent or identical. They have the same extension, include the same members. If, now, all the Mondays are rainy and all the rainy days are Mondays, at some time, the class Mondays is identical with the class rainy days. But this relation is not a "necessary" one, since neither of the inclusions in this identity is a "necessary" inclusion. But consider a different identity. Let  $a$  be the class Mondays and  $c$  the days following Sundays. Then  $ac' = 0$  and  $a'c = 0$ , ( $ac' + a'c = 0$ ), of necessity. All Mondays are days following Sundays and all days following Sundays are Mondays. We have here a necessary or definitive identity, an equivalence of *meaning* between "Monday" and "day following Sunday." The former identity is not of this type. If all Mondays are rainy days and all rainy days are Mondays, still that is no definition either of Monday or of rainy weather.

The defining relation (or pair of relations) is a relation of intension or meaning. To specify it requires the determination of two classes that are *necessarily* empty. This kind of class might be represented by equating it with a new symbol, —1. Such definitive or intensional equivalences are *not* specified when only extensional identity—the pair of  $=0$  relations—has been established.

The other point of importance is that the zero class is contained in every class. Since no Mondays are Tuesdays, the Mondays which

are Tuesdays are also Fridays. If  $a$  is Mondays,  $b$ , Tuesdays, and  $c$ , Fridays,  $(ab)c' = 0$ . It is also the case here that  $ab = -1$ . When it rains every Monday, all fair Mondays fall on the eighteenth. If  $a$  is Mondays,  $b$ , fair days, and  $c$ , the eighteenth, then  $(ab)c' = 0$ , since  $ab = 0$ . The questions here involved as to the legitimacy of inferring  $(ab)c' = 0$  from  $ab = -1$ , or from  $ab = 0$ , we must not here pause to discuss. The important point is to note what the inclusion of the zero class in every class means when we pass to the algebra of implications.

The transition may be made as follows: The ordinary hypothetical proposition, "If  $A$  is  $B$ ,  $C$  is  $D$ ," may be taken to state either an inclusion of classes or an implication. If  $a$  represent the class of cases in which  $A$  is  $B$ , and  $c$ , the cases in which  $C$  is  $D$ , then the proposition states that class  $a$  is included in class  $c$ , or  $ac' = 0$ . This same equation may also represent the fact that " $A$  is  $B$ " implies " $C$  is  $D$ ." At once we have a new interpretation of the algebra in which it becomes the usual algebra of implications—material implication. The further details of this transition are familiar.

Let us now suppose that " $A$  is  $B$ " is a false proposition. Then the class of cases in which  $A$  is  $B$  is (within the "universe of discourse") an empty class.  $a = 0$ . If  $a = 0$ ,  $ac' = 0$ , whatever proposition  $c$  may be. If  $a$  is false,  $a$  implies any proposition,  $c$ . If we suppose " $C$  is  $D$ ,"  $c$ , to be true, its negative,  $c'$ , is false. If  $c' = 0$ ,  $ac' = 0$ , whatever proposition  $a$  may be. If  $c$  is true, any proposition,  $a$ , implies  $c$ . "Napoleon was an anchorite" implies "fresh vegetables are poison." The class of cases in which Napoleon was an anchorite is a zero class and is thus contained in the class of cases in which fresh vegetables are poison, or in any other class.

This is certainly not an implication relation of a sort which ought to figure in mathematical proof. Euclid's parallel postulate or Lobachevski's postulate about coplanars is—one or other of them—false. Nevertheless, he errs who would take either postulate to imply anything and everything. Logical consequences follow regardless of truth or falsity of premises.

Suppose we consider the meaning, for the algebra of implications, of  $ac' = -1$ . The cases of  $a$  which are not cases of  $c$  are necessarily an empty class; the case in which  $A$  is  $B$ , but  $C$  is not  $D$  is logically impossible. This means, if  $a$ , then necessarily  $c$ . The truth of " $A$  is  $B$ " in conjunction with the falsity of " $C$  is  $D$ " is impossible. This is exactly the situation when " $C$  is  $D$ " can validly be inferred from " $A$  is  $B$ ." We may now add that if  $a = 0$  (" $A$  is  $B$ " is false), then  $ac' = 0$ : there is no case in which " $A$  is  $B$ " is true, but " $C$  is  $D$ " is false, since there is no case in which " $A$  is  $B$ " is true. But  $ac' = -1$  does not follow. If  $a$  ( $A$  is  $B$ ) were true,



$ac'$  might *not* be an empty class: the situation in which " $A$  is  $B$ " would be true, but " $C$  is  $D$ " false, may *not* be an *impossible* situation. " $C$  is  $D$ " can not be inferred from " $A$  is  $B$ " merely because " $A$  is  $B$ " is false.

We have here, in  $ac' = -1$ , a new—or, rather, old and usual—meaning of "implies," and the basis of a new algebra of implications. The detailed criticism of material implication and its reconstruction as strict implication may be omitted in favor of results.

In order to avoid such expressions as  $ac = 0$  and  $ac = -1$ , it will prove convenient to give them equivalents.  $ac = 0$  means "It is false that  $a$  and  $c$  are both true"; hence also, "At least one of the propositions,  $a$  and  $c$ , is, in fact, false." This last expression is usually symbolized as  $a' + c' = 1$ , or simply  $a' + c'$ .  $ac' = -1$  means "It is impossible that  $a$  and  $c$  be true together"; hence also, "At least one of the propositions,  $a$  and  $c$ , is, of necessity, false." This relation may be symbolized as  $a' \vee c'$ . The distinction between  $a' + c'$  and  $a' \vee c'$ , or between  $a + c$  and  $a \vee c$ , is this:  $a \vee c$  represents a dilemma whose horns are  $a$  and  $c$ ;  $a + c$  has a wider meaning and covers such expressions as "Either Napoleon was not an ancorite or fresh vegetables are poison." This last is no "necessary" relation. It breaks down before the test of contrary to fact supposition.<sup>5</sup>

We may now exhibit the primitive ideas and postulates for the proposed system of Strict Implication.

### PRIMITIVE IDEAS

1. *Propositions or propositional functions*, symbolized by  $p$ ,  $q$ ,  $r$ , etc.

A propositional function is an expression, containing a variable or variables, which becomes a proposition when a value of the variable or variables is assigned. It is one of the advantages of Strict Implication that propositions and propositional functions obey the same laws. We reason in the same "modes" about " $x$  is a man" and "Socrates is a man."

2. *Negation*.  $\sim p$  symbolizes the negation of  $p$  or " $p$  is false."

3. *Implication*.  $p \supset q$  symbolizes " $q$  can be inferred from  $p$ " or " $p$  (strictly) implies  $q$ ."

4. *Product*.  $pq$  symbolizes the logical product of  $p$  and  $q$ , or the proposition which asserts both  $p$  and  $q$ ; " $p$  is true and  $q$  is true."

5. *Logical Constants*. Negation is a logical constant, and any relation which obtains between propositions or propositional func-

<sup>5</sup>For a discussion of the ambiguity of "either—or" propositions in relation to the algebra, see "Implication and the Algebra of Logic," C. I. Lewis, *Mind*, N. S., No. 84.

tions as such is a logical constant. Implication and product are such; other relations will be defined.

### POSTULATES

- P. 1.  $(p = q) \supset [(p \supset q)(q \supset p)]$ .  
 P. 2.  $[(p \supset q)(q \supset p)] \supset (p = q)$ .  
 P. 3.  $(p \vee q) = (\sim p \supset q)$ . Definition of the dilemmatic disjunction,  $p \vee q, -pq' = -1$ .  
 P. 4.  $(p + q) = \sim(\sim p \sim q)$ . Definition of the non-dilemmatic disjunction,  $p + q, -pq' = 0$ .  
 P. 5.  $(p + p) \supset p$ .  
 P. 6.  $(p \vee q) \supset (q \vee p)$ .  
 P. 7.  $qp \supset pq$ .  
 P. 8.  $pq \supset p$ .  
 P. 9.  $p \supset \sim(\sim p)$ .  
 P. 10.  $(p \vee q) \supset (p + q)$ . The dilemmatic disjunction of two propositions implies their non-dilemmatic disjunction as well. This implication is not reversible.  
 P. 11.  $[p \vee (q \vee r)] \supset [q \vee (p \vee r)]$ .  
 P. 12.  $(q \supset r) \supset [(p \supset q) \supset (p \supset r)]$ .

(Adjoined remarks in the above are, of course, no part of the postulates.)

- P. 13. If  $p$  is asserted and  $p \supset q$  is asserted,  $q$  may be asserted.  
 P. 14. If  $p$  and  $q$  are separately asserted,  $pq$  may be asserted.  
 P. 15. Any expression which contains only propositions, or propositional functions, and logical constants is itself a proposition, or propositional function.  
 P. 16. Any proposition or propositional function may be substituted for  $p$  or  $q$  or  $r$ , etc., in any postulate or theorem.

The last four postulates are the principles of operation of the system. The first two practically restate what is already contained in the primitive ideas of implication and product. The last two determine the range of the variables  $p, q, r$ , etc.

Optional postulates which might be added to our list are:

- P. 17.  $[p(qr)] \supset [q(pr)]$ .  
 P. 18.  $(q \supset r) \supset [(p + q) \supset (p + r)]$ .  
 P. 19.  $[p \vee (q + r)] \supset [q \vee (p + r)]$ .

Of these, the first two have only infrequent and unimportant consequences. P. 19 has highly important consequences. The truth of every one of these turns upon the question as to what would be true in case logical principles were contradicted by facts. The truth of the postulate is doubtful and its significance chiefly epistemological.

It may be remarked in passing that P. 19 and its consequences well exemplify the fact that a formal postulate may sometimes serve to conceal rather than to express an important principle.

The entire system of strict implication could be developed from a somewhat smaller number of postulates, by a different choice of primitive ideas. But the set given above has compensating advantages.

Among the immediate consequences of these postulates, the following are selected as those which offer some difficulty of deduction but are important for further work. The order in which they are set down indicates, in general, the order of their simplest proof.

- P. 20.  $(p = q) \supset (p \supset q)$ .
- P. 21.  $(p = q) \supset (q \supset p)$ .
- P. 22.  $(\sim p \supset q) \supset (\sim q \supset p)$ .
- P. 23.  $p \supset (p + q)$ .
- P. 24.  $p \supset p$ .
- P. 25.  $\sim (\sim p) \supset p$ .
- P. 26.  $(p \supset q) \supset (\sim p \vee q)$ .
- P. 27.  $(p + q) \supset (q + p)$ .
- P. 28.  $(p \vee p) \supset p$ .
- P. 29.  $(\sim p \supset p) \supset p$ .
- P. 30.  $(p \supset q) \supset \sim (p \sim q)$ .

P. 28, P. 29, and P. 30 state implications which are *not*, in strict implication, reversible; in any system of material implication they would be reversible. This difference is of considerable importance. The general character of further consequences of these postulates is indicated by the fact that strict implication includes all theorems of material implication which are consonant with the meaning of "implies" which we have chosen, and many other significant theorems which do not appear in material implication. Strict implication excludes all theorems of material implication which are false for ordinary inference. Besides excluding such doubtful theorems, strict implication makes clear the meaning of many others which seem doubtful because of the ambiguity of  $p + q$ , in systems of material implication, if read "either  $p$  or  $q$ ." To take only two examples: (1)  $\sim (p + q) \supset (\sim p + q)$ ; <sup>6</sup> (2)  $\sim (p + q) \supset (p + \sim q)$ ; <sup>7</sup> both these theorems become clear when we discover that the disjunctions involved will not be dilemmas,—that the theorems do not hold in the form (1)  $\sim (p \vee q) \supset (\sim p \vee q)$  and (2)  $\sim (p \vee q) \supset (p \vee \sim q)$ .

Strict implication has, also, positive results which are equally important. These may be brought out by considering P. 1 and P. 2. Objection might be taken to these postulates on the ground that they

<sup>6</sup> "Principia Mathematica," \* 2.47.

<sup>7</sup> *Ibid.*, \* 2.48.



contain an undefined expression ( $p=q$ ) which is not mentioned among the primitive ideas. P.3 and P.4 are expressions of this type, and all such might be referred to as "definitions." The curious fact is that it is not essential, in strict implication, that definitions should have any meaning; it is requisite only that we should be able to get their implications. And these may be had, for any definition, by applying P.1. If we substitute, in P.1 ( $p \vee q$ ), for  $p$  and ( $\sim p \supset q$ ) for  $q$ , we shall have,

$$[(p \vee q) = (\sim p \supset q)] \\ \supset \{ [(p \vee q) \supset (\sim p \supset q)] [(\sim p \supset q) \supset (p \vee q)] \}.$$

The first part of this expression is, now, the "definition," P.3. The second part, which P.3 is here asserted to imply, is a pair of implications. By using P.7 and P.8 upon P.1, it could be shown how we may get either of these implications separately (see P.20 and P.21). That is, the "definition," P.3, merely as an undefined expression containing functions of  $p$  and  $q$ , implies these two theorems, (1)  $(p \vee q) \supset (\sim p \supset q)$ , (2)  $(\sim p \supset q) \supset (p \vee q)$ . The only use to which any "definition" ( $p=q$ ) may be put, is to get from  $p$  to  $q$  or from  $q$  to  $p$ . This is properly done by using one of the implications ( $p \supset q$ ) and ( $q \supset p$ ). Thus "definitions" could be dispensed with altogether, and replaced by the pairs of implications which we get from them by P.1. If this procedure were adopted, P.1 and P.2 would be superfluous.

The use made of definitions in any system of material implication, and in mathematics generally, is to substitute the defining expression for the defined, or *vice versa*, at any point in the "work." This procedure has been defended on the ground that the two expressions represent the same mathematical entity. But it is extremely doubtful if the only reason for any definition is that we may have various symbolic representations of the same thing. Definitions would then seem a useless violation of the principle of parsimony. Especially this is true where the defining expression is not symbolically simpler than the defined. In strict implication, and in any mathematical system which used it as an organon of proof, such substitution of expressions equivalent by definition is wholly unnecessary. Instead, one of the pairs of implications involved is made use of, and is treated exactly like any other implication. This brings one step nearer the ideal of mathematical work as consisting only in the substitution for variables of values of variables, or of other variables which may be regarded as values.

An alternative treatment of definitions would be to add to the number of our primitive ideas, the relation "is logically equivalent to" or "means the same as," symbolized by  $=$ . This procedure

avoids various possible objections to "expressions without meaning" and yet retains the advantage that substitution of equivalent expressions is unnecessary. Adopting this method, we can then make a somewhat spectacular deduction from P. 1 and P. 2. If we substitute in P. 2, the product  $qr$ , for  $q$ , we have (theorem 1) :

$$[(p \supset qr)(qr \supset p)] \supset (p = qr).$$

Substituting, in this theorem,  $(p = q)$  for  $p$ ,  $(p \supset q)$  for  $q$ , and  $(q \supset p)$  for  $r$ , we have :

$$\begin{aligned} & \{[(p = q) \supset [(p \supset q)(q \supset p)]]\} \{[(p \supset q)(q \supset p)] \supset (p = q)\} \\ & \supset \{(p = q) = [(p \supset q)(q \supset p)]\}. \end{aligned}$$

The expression within the first pair of braces is now P. 1; within the second pair, P. 2. Hence this complicated expression may be read: Theorem 1 states that the product, (P. 1)(P. 2), implies as a theorem :

$$(p = q) = [(p \supset q)(q \supset p)].$$

This theorem may be read: " $p$  means the same as  $q$ " means the same as " $p$  implies  $q$  and  $q$  implies  $p$ ." (The use of postulates P. 13–P. 16 in this proof is tacit.)

It would be unsafe to call this theorem a definition of the defining relation. Let us be satisfied to say that we have deduced an expression which makes clearer the meaning of that logical equivalence which was taken as a primitive indefinable.

This theorem is an interesting puzzle, but is unnecessary to strict implication, since the only use which would be made of it would be to derive its implications, which are P. 1 and P. 2. Other equivalences can, in strict implication, be deduced. For example, if we substitute  $q$  for  $p$  and  $p$  for  $q$  in P. 6, we have  $(q \vee !p) \supset (p \vee q)$ . Without substitution, P. 6 reads  $(p \vee q) \supset q \vee p$ . These two together imply, by P. 2,  $(p \vee q) = (q \vee p)$ . A dilemma means the same thing when the order of its members is reversed. This theorem is definitive of the dilemma just so far as the expressions,  $(p \vee q)$  and  $(q \vee p)$ , are different. The theorem  $(p \supset q) = (\sim p \vee q)$  can also be deduced. If we can not derive definitions, at least we derive equivalences of meaning, of which definitions are cases. Is it not possible that the usual treatment of definitions involves some confusion between mathematical and psychological requirements?

If what is set forth in the above paragraphs be correct, it throws considerable light on the nature of definitions in mathematics. Any definition is an equivalence of meaning between two expressions,—a reciprocal implication when "implies" has the meaning which figures in valid inference. " $p = q$  Def." means  $(pq' = -1)$  and

( $p'q = -1$ ). Definitions are not assumptions fundamentally different in kind from other postulates. They need not stand outside the mathematical system as sanction for substitutions, but should appear *in* the system and be used exactly as other postulates. Such equivalences can frequently be deduced, though the psychological requirement, that expressions must be clear in meaning when first introduced, limits the usefulness of such deductions. Definitions could be dispensed with, without materially altering the system, if proper implications were assumed.

It should be remarked, however, that strict implication does not stand or fall with this treatment of definition which it makes possible. The more usual method might have been followed in developing the system.

In leaving the subject of equivalences, it is well to note the difference between ( $p = q$ ) in strict implication and the "equivalence" ("Principia Mathematica,"  $p \equiv q$ ) which figures in material implication. This last is not an equivalence of meaning, but only of "truth value." ( $p \equiv q$ ) means only, " $p$  and  $q$  are either both true or both false." This relation holds for ( $p = q$ ), but the defining relation can not be got out of it. For this reason, "equal by definition" is, in material implication, a primitive idea which needs to be distinguished from equivalence in general. The fact that equivalence of *truth value* is reciprocal *material* implication, while equivalence of *meaning* is reciprocal *strict* implication, throws more light upon the meaning of "implies" in the different systems. Which of these accords with the nature of inference, is a question of some importance for pure mathematics, if any ideal development from "logical constants" is to be attempted.

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## DISCUSSION

### "EVERYBODY'S WORLD" AND THE WILL TO BELIEVE

I AM not sure that these few lines, elicited by Mr. Adams's courteous paper,<sup>1</sup> should come under the head of "discussion." They are not intended as a refutation of what he has said, but, rather, as an explanation of one or two points on which I do not seem to have made my meaning clear.

But, first, I should confess that I regret having headed a chapter in my recent book with the words: "The World of the New Realism,"

<sup>1</sup> This JOURNAL, Vol. X., page 186.



as though there were but one. I have just been reviewing the literature of the last decade on realism, and have been so much impressed with the very significant divergences of opinion among realists keen enough to have an independent opinion, that I deplore any form of expression which might create the delusive impression that a "school" of new realists has the right to existence, and to recognition as a "school." There appears to be some danger that the expression "the new realism" may degenerate into the rallying-cry of a party, and may be accepted by those who disapprove of the present current of philosophical thought in England and America as a definitely fixed philosophy which may without more ado be made the object of attack of all and several. There are at least a score of realists writing at the present day, of whom, I think, no one has a better right to be called "new" than any other one, though some undoubtedly bring forward more novelties than do some others. How far individual opinions held by one or more of these writers are directly traceable to their realism is a fair question. Certainly no one of them should be made responsible for the opinions of all the others, and it is doubtful whether any one of them can justly be made responsible for all the opinions of any one of the others. I, for my part, do not wish to be made responsible for any debts save those contracted by myself.

Now, in calling the world phenomenon, I have not meant to say anything derogatory to the world, to its reality, to its order, to its system. To me it is a world of minds, as well as a world of material things. Of material things we have, I believe, what may justly be called a direct knowledge. Of minds other than our own, I believe our knowledge to be inferential. In saying, in the words quoted by Mr. Adams, that "we are relieved of the burden of a hopeless search for a reality wholly different in nature from the homely realities with which we are brought face to face every day," I had in mind those who distinguish sharply between appearance and reality and refuse to look for reality in what I call appearances, *i. e.*, in direct experience. I had the same thought in mind in saying "we are at the very heart of things, or as much so as it is conceivable that we should be," and supposed the context would make my meaning clear. I had no intention of denying that our knowledge, both of the material world and of minds, may be indefinitely increased; nor did I mean to assert that the hopes of those who look to find in the world evidences of a cosmic mind are to be regarded as illusive. The reasons which have been advanced for cherishing such hopes have been many and diverse. Some of them date back to a time long preceding the dispute between the realist and the idealist in the modern sense of those terms. They have not been regarded as incompatible with the existence of a material world, independent of perception, and not

properly to be called mental. Those who urge them, in our day, at least, usually feel that they are traveling beyond the confines of exact and indubitable evidence, nor do they expect to be able to convince those of an opposite mind as even the reluctant may be convinced within the confines of the more limited field of exact science.

I have said in my book that "Everybody's World" is imperfectly illuminated, but, nevertheless, maintained that certain features of it appear unmistakable. That the realist should adjust himself "to what is definitely known of reality" seems to me a reasonable demand; that he should adjust himself to nothing else appears at least disputable. I can see no reason why realism, as such, should bind his hands in this respect. The one city of refuge whose gates are closed to him is that built by the idealist—the stronghold of the idealist in the strict metaphysical sense of the word, and in no other sense. And if the realist's indulging a larger hope lays him open to the charge of transfiguring "the system of things given in our common experience," I suppose he must plead guilty, only begging that his offense be not confounded with that of certain others who would transfigure the system of things in quite other senses. He still holds to a physical world independent of perception, in a rather definite sense of those words, and to minds that know that world. And in permitting himself to transcend the limits of indubitable evidence in embracing a view of the system of things which takes account of the conservation of "human interests and values," he may differ more or less widely either with other realists or with idealists, and he may differ with them either in principle or in detail.

Thus, he is not at one with the realist to whom realism implies what has rather unhappily been termed naturalism. On the other hand, he is not at one with those who would transmute physical things into ideas, into mind-stuff, or into will. He is not at one with the philosopher who would make of minds and of things unreal appearances of a colorless Absolute which is neither mental nor physical. He distrusts the reasonings of the thinker whose dialectic would develop a universe by expanding the "internal meaning" of a song. If he is of a cautious turn of mind, he will accept with much hesitation enthusiastic statements touching his own power to create the truth and reality of the universe. Such transmutations of "Everybody's World" he can not accept.

Nor can he find that in all the philosophies which transmute the world, as is just above indicated, the conservation of "human interests and values" is really taken into account at all. Of provision for such in the philosophy of Berkeley there can be no question. It does not, however, appear to enter into the reckoning of the particular philosophers whom I have adduced as maintaining that the physical

world is "mind-stuff" or is "will." It can manifestly have no place in a doctrine in which human beings as well as human interests and values are infected with self-contradictions and can only contribute to reality in so far as they "cease." Is there any such conservation, in an unequivocal sense of the word, in the world attained by the expansion of the "internal meaning" of the song? I can find none whatever, though I am aware that others think they do. The cheerful pragmatic doctrine does make room for it—its protagonist was a realist—and in this respect it may be classed with the idealism of Berkeley, and contrasted with the other philosophies examined.

The moral of all which seems to me to be that, in making up our minds what sort of a world this or that writer believes our world to be, we must not ask merely whether he is a realist or an idealist. Idealists differ vastly among themselves. So do realists—even new realists. I ought to have made this clear in my book, if I have not done so. And if any idealist does in his philosophy provide unequivocally for the conservation of human interests and values, I am inclined to think that he is moved to do it by much the same considerations that influence the realist who makes the same provision, however different the paths which they seem to follow. In so far they ought not to be out of sympathy with each other.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Das Problem der Vererbung "erworbener Eigenschaften."* RICHARD SEMON. Leipzig: Wilhelm Engelmann. 1912. Pp. viii + 203.

It is about a generation since Weismann precipitated the famous controversy over the "inheritance of acquired characters." Prior to that time such a mode of inheritance was generally accepted without question; indeed, the distinction drawn by Weismann between "germinal" and "acquired" characters had not even occurred to most biologists. The problem was promptly recognized as one of far-reaching importance. Herbert Spencer rightly saw that the triumph of this new point of view meant the collapse of some of his most cherished theories. For some years the controversy was waged fiercely. But at that time little appeal could be made to experiment, though Brown-Séquard's guinea-pigs long did valiant service on the one side and Weismann's dock-tailed mice on the other.

Weismann's skill as a dialectician, together with the real scarcity of decisive evidence on the other side, led to a strong trend of opinion in his favor. This trend gained further support from the brilliant studies of the cell which held the attention of biologists during the years when the controversy on "acquired characters" was keenest. One discovery after



another seemed to speak for the immutability of the germinal substance and the permanent individuality of its constituent parts.

Then came the unearthing of Mendel's celebrated experiments, and the formulation of the "mutation theory" of De Vries. Experimental Mendelism attracted hosts of enthusiastic followers, who busied themselves with elaborating the Mendelian formula to the *n*th power. And an immensely important mass of facts they have undoubtedly brought to light. To this dominant school of investigators, any suggestion that the old question of "acquired characters" was still deserving of an experimental test seemed reactionary or worse. "Lamarckism" to many of this school of thought was beyond the pale of scientific discussion altogether, being hardly more respectable than the alleged phenomena exhibited at a spiritualistic séance.

But, fortunately, a small group of investigators have not been deterred by considerations of "respectability," and now, after some fifteen or twenty years of experimentation, they have amassed a body of evidence which can no longer be ignored or treated lightly. *Evidence for what?* Certainly for the "inheritance of acquired characters" in the sense in which that expression was employed at the commencement of the controversy. But to many the time has come for discarding that rather threadbare expression altogether, partly because it is, in its nature, ambiguous, partly because Weismann and his followers have progressively restricted its meaning so as to exclude each new fact which they have been compelled to accept.

A few years ago, Semon brought together in a comprehensive way the most important data supporting this mode of inheritance in a paper of some 80 pages.<sup>1</sup> Very recently, he has amplified this earlier work and extended its scope. As a mere summary of a certain important group of biological facts, this little book is invaluable. It is most complete in its record of those experiments which have had for their object a direct attack upon the main problem which we are here considering. But nature's own experiments have in some cases received full consideration. Evidence has been drawn, for example, from the thickening of the skin on the soles of the feet, a condition already evident in the fetus, and from the diurnal rhythm of leaf-closing in certain plants, which is independent of individual experience.

Evidence, we may ask again, of what? Semon himself formulates his problem as follows: "May we suppose that, under favorable circumstances, through reactions evoked in the parent body, the hereditary potencies of the germ-cells (genotypical constitution), and thereby the reaction-mode of the offspring, may become modified in the same direction as the modifications appearing in the parents?" (pp. 9, 10). This may sound like a clumsy and not very intelligible way of asking whether or not acquired characters are inherited. But real differences are expressed. It is not an inheritance of the "character" itself which is contended for, but an altered *disposition*, which leads the "character" to develop spontaneously

<sup>1</sup>"Der Stand der Frage nach der Vererbung erworbener Eigenschaften," *Fortschritte der naturwissenschaftlichen Forschung*, II. Band, 1910.

at a given time or place. The "character" is merely an outward mark or symbol, through which the response of the organism to some stimulus manifests itself. The absence of such an outward indication in the parent does not necessarily imply the lack of any sort of reaction on the part of its living tissues. On the other hand, the presence of such an outward manifestation, though indicating some sort of reaction to a stimulus, on the part of the organism affected, does not necessarily imply that this reaction occurred at a time when the germ-cells could be influenced. To state the matter somewhat paradoxically, we may have the inheritance of an "acquired character" which was not manifest in the parent at all; while, on the other hand, a manifest character may have been impressed upon the parent at a period when any transmission was out of question (pp. 7, 8). Here, and elsewhere throughout the book, Semon makes use of Tower's apparent demonstration of the existence of a particularly impressionable period in the life of the germ-cells. Influences which are brought to bear during this period may lead to perceptible results in the offspring, while influences acting at any other time will probably have no appreciable effect. This is one explanation which Semon offers for the admittedly large proportion of cases in which modifications of the parent body leave no trace in the offspring.

It is plain to any one who follows the present work that the problem dealt with is one of much greater complexity than had been supposed at the time when it was first formulated by Weismann. Indeed, it is well known that Weismann's own conception of the "continuity of the germ-plasm" soon lost all claim to simplicity, but annexed one subsidiary hypothesis after another, as fast as data were produced which were incompatible with the earlier versions. Weismann was forced to admit not only the reality of a general influence upon the germ-cells of conditions affecting the "soma" or body, but to recognize the possibility that the former might be influenced locally and partially, resulting in definitely restricted effects upon the offspring. Such effects would not necessarily resemble, however, the original effects upon the parent, and even if they should, *there would be no inheritance of acquired characters*. For such instances of the parallel modification of parent and offspring, through the influence of external conditions, Weismann made use of a hypothesis to which the name of "parallel induction" was later given by Dettò. This is the simple assumption<sup>2</sup> that the germ-cells are directly reached by the same physical influences, *e. g.*, temperature or nutrition, which bring about the modification of the parent body. Plainly, in such an event, it would be improper to speak of *inheritance* at all. This hypothesis has been used very freely by Weismann and others, and notably by Tower, who has brought forward some seemingly strong evidence in its support.

Among the most convincing parts of Semon's discussion are those directed against this interpretation of the phenomena at hand. He rightly contends that in some of the best authenticated cases of the repetition of parental modifications in the offspring, the possibility of a simultaneous

<sup>2</sup> The simplicity is more apparent than real, as the present reviewer, among others, has pointed out. (See *American Naturalist*, February, 1911, page 96.)

influence upon the germ-cells is practically excluded. Consider, for example, the effects of optic stimuli upon a salamander, or of temperature stimuli upon a mammal, or again of habituation to contact with mankind on the part of a wild species.

And even in those cases where the same physical agent could conceivably influence both the soma and the germ-cells, there are serious physiological difficulties in the way of thus accounting for identical specific effects upon parent and offspring. Here, as elsewhere, it is likely that the germ-cells are affected, not immediately, but secondarily, through a reaction evoked in the parental organism.

Semon has devoted considerable space to answering some of the older arguments against the "inheritance of acquired characters" which were based upon negative evidence, *i. e.*, the failure to detect such an inheritance in what would seem to be crucial cases. As regards mutilation experiments, for example, his answers are various. Perhaps, he says, some of these experiments would have yielded positive results if performed during the impressionable period of the germ-cells. And, after all, we must remember that a mutilation is not a reaction to a stimulus on the part of the organism, but a mere passive effect. The typical response to an injury, when such occurs, is regeneration. And here he points to certain experiments of Kammerer's upon the ascidian *Ciona*, in which it was found that the enlargement of the siphons, after amputation, repeated itself in the succeeding generation (pp. 58, 59).

Two seemingly formidable objections, which have been raised of late to the inheritance of parental modifications, are derived from recent work in experimental breeding. The first of these is the observed fact that "pure recessives," in cases of Mendelian inheritance, appear to be as pure, when extracted after many generations of hybridization, as they are at the outset. Why have not the "dominant" soma characters of the parent affected the eggs or sperm cells? Semon's attempt to meet this difficulty is, it must be confessed, not entirely satisfying, since it rests upon an assumption which does not seem wholly warranted. At other points in his discussion, however, he contends that "morphogenic excitations (those conditioned by the mere presence of parts) are, as a rule, perhaps everywhere, too weak to bring about an induction of the germ-cells" (p. 171). The most effective modifying influences for the latter are *active reactions* of the parent body to this or that external stimulus. "Functional excitations" (*i. e.*, such as arise from the use and disuse of parts) stand, in Semon's opinion, intermediate between the other two classes.

The second of these difficulties is one which has been made much of by Johanssen, namely, that the artificial selection of ordinary quantitative variations, particularly within a "pure line" (strain of uniform heredity composition) appears to be entirely inefficacious. Since the differences which appear within a pure line are, it is assumed, due wholly to the effect of chance differences in the environment of the various individuals, this fact is naturally offered as an additional argument against the "inheritance of acquired characters." The reply is that long-con-



tinued breeding is perhaps what is necessary in order to produce any visible results in such cases, and furthermore, that the selection of "quantitative" or "fluctuating" variations has, in reality, shown itself to be efficacious in the hands of such able breeders as Cuénot and Castle. Finally, negative results of this sort have no conclusive weight. There are confessedly many other cases of parental modification which appear to be without any visible effect upon the offspring, however long repeated.

In a controversy like the present one, where there are several interwoven problems in dispute, and where much of the dispute relates to the definition of terms, it means little to assert that either one or the other side of the case has been "proved." We may, however, heartily concur in Semon's belief that henceforth "any theory of heredity or descent has to reckon with the empirically established factor of somatic inheritance" (p. 173), without, perhaps, wholly agreeing with him in his interpretation of this "somatic inheritance." Indeed, we may go further and add that the dogmatic and unqualified denial of the "inheritance of acquired characters," which is still frequently heard, implies not only an ignorance of many well-attested facts, but an unfamiliarity with the present status of the whole question discussed in the work before us.

It is hardly fair to close the review of even such an admirable book as this one of Semon's without pointing out what seem to be one or two weak points. To the reviewer it appears that the worth of the experimental evidence has not always been carefully weighed. Most of us will probably agree in our admiration for the amazing productivity and versatility of the Austrian zoologist Kammerer. Yet the very extent of the territory covered by this investigator within the space of comparatively few years would deter many of us from basing any weighty conclusions upon some of his unconfirmed experiments.

Again, the possibility does not seem to be fully considered by Semon that detailed correspondences between parent and offspring may not always imply the existence of a causal nexus as complicated as the phenomena which it links together. Pathology teaches us that the action of a single bacterial poison may produce quite an elaborate symptom-complex, requiring weeks for its full development. Why may not the transmission of a comparatively simple chemical substance from parent to offspring produce in the latter a "symptom-complex" which parallels in detail a similarly caused group of changes in the former?

Thus it might turn out that some of the known instances of "somatic inheritance" could be explained in relatively simple terms. Whether or not such an explanation is of general applicability may well be doubted, but it ought, at least, to be fully considered before phenomena of a less conceivable sort are invoked. In any case, however, it would seem a mere quibble to deny the use of the word "inheritance" to such a form of transmission.

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*Introductory Philosophy; A Text-book for Colleges and High Schools.*

CHARLES A. DUBRAY. New York: Longmans, Green, and Company. 1912. Pp. xxi + 624.

This book is remarkable for the quantity of subject-matter it contains. Besides a General Introduction, it includes the following major parts: Empirical Psychology, Logic, Ethics, Epistemology, Cosmology, Rational Psychology, Theodicy, and Outlines of a History of Philosophy. Moreover, each of these subjects is presented in considerable detail.

Pedagogically this book is admirable for its clearness, conciseness, and definiteness. It contains information that can be learned and recited. But what a tremendous undertaking such a book is for both teacher and student! Would it not be far better for the majority of students to know less, to be given only the problems in closer or more apparent relation to human life and affairs, and to gain the enthusiasm for philosophy and psychology which comes from such association? Moreover, so much that is highly interesting either is spoiled by being condensed or has to be omitted from so concise a book. Of course, much can be said for a book that leaves the interesting matter to the teacher to relate; but those of us who were brought up on James's "Psychology" can not forget how interesting this subject can be made by a text-book alone. Yet in saying this I must add two qualifications: first, that I found the entire book interesting reading, and perhaps some beginners would, also; and secondly, that conciseness, clearness, and definiteness are pedagogically the major virtues in any text-book.

As to doctrine taught, it is difficult to say anything which is fair either to the book or to the reviewer, because of the multitude of problems presented and solved. In general, though the doctrine is true to scholasticism and to ecclesiastical tradition, it reveals not only a wide acquaintance with modern philosophy and psychology, but a most welcome spirit of fairness, gentleness, and open-mindedness even where it refutes or condemns. To me the least interesting, the least satisfactory, though hardly the least modern part, is the empirical psychology. Whereas the theory of knowledge seems excellent. Indeed I wish our Hegelian colleagues would read this division and take it thoroughly to heart. Though I have strong Aristotelian leanings, the "Cosmology" seems to me to conflict with fairly well established scientific conclusions. Likewise as to the "Theodicy," modern philosophy certainly has shown that the problems of God's existence, of his nature and of his relation to the world, are not as easy as scholasticism makes them to be, and that whoever really solves these problems must do so by other means than merely by the older metaphysical devices.

But, regarding the book as a whole, both as to its doctrine and its pedagogical traits, my feeling is not one of fault-finding with, but one of decided indebtedness to, the author.

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*L'Ennui: étude psychologique.* E. TARDIEU. Second edition. Paris: F. Alcan. 1913. Pp. ii + 284.

This book, now in its second edition, deals with a mental state which may be considered a border-line condition between the normal and the abnormal. Ennui may not be well defined, but is described as "the equivalent of repose" and "the condition for work." All occasions and times give rise to ennui. A business or occupation is a detestable servitude and is described as an "*ennui en permanence*," but some professions, *e. g.*, journalism, politics, acting, art, literature, are less so than others, because in them there is constant change. The work is cleverly written, and throughout there are numerous wise or cynical or satirical (the interpretation probably depending upon the reader's mood) aphorisms, such as that regarding business quoted above and the following: "*s'ennuer à deux, tel est l'idéal conjugal*," and "*l'ennui est le démon de la femme*." Although a chapter is devoted to the consideration of remedies, it is apparent that few can ever follow out the suggested treatment and become normal. Although not strictly scientific, its cleverness makes it well worth reading, for it is as entertaining as many recent novels. If a book of this character mirrors the author's mental state, there is sufficient in it to warrant the belief that he is a combination of misanthrope, philosopher, and humorist.

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## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. February, 1913. *Les défenses psychiques* (pp. 113-134): DR. I. IOTYKO. — This, a first article, is a study of pain starting out from the esthophylactic principle established by Sergi. *Origine des images symboliques* (pp. 135-155): É. BRÉNIER. — From the author's point of view, the image is the fixed element and the concept, the variable element. In the conflict between beliefs and realities, "the symbolic image is nothing but the most economical solution possible of this conflict and the return to equilibrium." *La valeur du pragmatisme* (pp. 156-183): H. ROBET. — "The originality of pragmatism is in having . . . subordinated the true and the real to the useful, in having made of value and of the good the keystone of epistemology, and in having placed in morality the foundations of metaphysics itself. . . . But a radical pragmatism is only possible on condition that one accepts by blind instinct the supreme ends of human life," and this is its great weakness. *Analyses et comptes rendus.* De Roberty, *Les concepts de la raison et les lois de l'univers*: G. H. LUQUET. J. M. Baldwin, *Thought and Things*, Vol. III.: A. LANDE. Dr. É. Lask, *Die Lehre vom Urteil*: G. H. LUQUET. Dr. M. Montessori, *Le case dei bambini*: L. DUGAS. H. Dussauze, *Les règles esthétiques et les lois du sentiment*: C. LALO. É. Landry, *La théorie du rythme et le rythme du français déclamé*: L. M. É. Vendéen, *Principes du beau*: A. JOUSSIN. C. Bellangé, *Spinoza et la philosophie moderne*: R. BERROD.



G. Fuller, *The problem of evil in Plotinus*: C. HUIT. *Revue des périodiques*.

McComas, Henry C. *The Psychology of Religious Sects*. New York: Fleming H. Revell Company. 1912. Pp. 235.

Major, David R. *The Elements of Psychology*. Columbus, O.: R. G. Adams and Company. 1913. Pp. xiii + 411.

Miller, E. Morris. *Kant's Doctrine of Freedom*. London: George Robertson and Company. 1913. Pp. xv + 184. 3s. 6d.

## NOTES AND NEWS

THE *Revue de Metaphysique et de Morale* comments as follows on the death of George Rodier at the age of forty-nine years.

"The premature death of George Rodier is a loss which will be keenly felt by all French students of ancient philosophy, by all who knew him and could appreciate his upright, straightforward character and the extent of his devotion to his friends, and, finally, by all those who saw with what extraordinary courage, in view of the cloud which darkened his life and which he strove to forget in his work, he bore the anxiety and suffering of his last years. As a student, at the Faculté des Lettres at Bordeaux, of Messieurs Espinas and O. Hamelin, he received from the instruction of the latter a stimulus which determined the philosophical trend of his whole life. One of his theses presented for the doctorate at the Sorbonne in 1891 dealt with *La physique de Straton de Lampsaque*, while the second, *De vi propria syllogismi* was a most remarkable piece of work which he afterwards translated into French and published in *l'Année Philosophique* for 1908. His peculiar ability as an historian of Greek philosophy became strikingly apparent in 1900 when he published Aristotle's *Traité de l'ame*, with a translation and commentary. Profound erudition, clear and penetrating exegesis applied to the most difficult and obscure portions of the original text, prudence and caution in its criticism and interpretation, and an intellectual honesty throughout are the indisputable merits of this important work.

"After teaching at Rochefort and Tarbes, Rodier was given a professorship at the *Facultés des Lettres* of Toulouse and Bordeaux, and, finally, in 1894 he was appointed to the chair left vacant by Victor Brochard at the Sorbonne. His works and the reputation which his teaching at Bordeaux had gained for him determined his appointment by the Faculté, an appointment seconded by the often expressed wish of Brochard.

"Besides his aforementioned works, Rodier wrote many important articles for various magazines: *La composition de la physique d'Aristote*; *Les mathématiques et la dialectique dans le système de Platon*; *Sur une des origines de la philosophie de Leibniz*; *La cohérence de la morale stoïcienne*; *L'évolution de la dialectique de Platon*; *Remarques sur le Philèbe*, trois articles de la *Revue des Études anciennes*; *Une revue générale de philosophie ancienne*."

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### SOME DISPUTED POINTS IN NEO-REALISM

INSTEAD of replying severally to the criticisms of my "Present Philosophical Tendencies," I have thought it wise to gather these criticisms together and confine my attention to those which indicate some general objection or misunderstanding. Most of the criticisms of "Present Philosophical Tendencies" were written before the appearance of "The New Realism"—and that book will, I trust, already have served to clarify the issues so summarily and inadequately treated in my own earlier book. But I am too grateful to those who have taken the trouble to read my book, the greater trouble to think it over, and the still greater trouble to write about it, not to attempt a repayment in kind. As for the rest, I am beguiled by the hope of speaking more plainly than before, and to better effect.

#### 1. THE INTERPRETATION OF IDEALISM

Professor Lovejoy (whose friendly support and vigilant criticism I deeply appreciate and most gratefully acknowledge) thinks that I have committed at least two grave errors in my historical interpretation of idealism. The first of these errors is "a singular, an enormous oversight."<sup>1</sup> It is evident that Professor Lovejoy is both astonished and scandalized. I must do what I can to relieve his amiable distress.

The issue, O impartial spectator, is this. I have contended that modern idealism "relies mainly, if not entirely, on the Berkeleian proofs"—meaning by these the argument that nothing is known that is not experience or idea (argument from "the ego-centric predicament"), and the argument that whatever is experience or idea is exclusively and necessarily so ("argument from initial predication"). Professor Lovejoy, on the other hand, asserts that "idealism—or at least the opposition to physical realism—has never relied solely upon these two proofs, has seldom relied upon them mainly, and has sometimes, especially of late, not relied upon them at all."

<sup>1</sup> This JOURNAL, Vol. IX., pages 673 ff.

The argument I am accused of neglecting and which "every school-boy knows" is the "dialectical" argument from "the relativity of the sensible qualities and magnitudes of objects to their individual percipients," or "the physicist's doctrine of the 'subjectivity' of most of the sensible attributes of matter."<sup>2</sup>

What, if anything, the argument of the dialectical school-boy really proves, I shall undertake to discuss below. That it proves skepticism or dualism rather than idealism, and that it presupposes the naturalistic world-order in which an external cause acts upon a sentient organism, is suggested by Professor Lovejoy's qualifications and admissions in this very context. But we have to do at present with a specific question of history. My contention is that idealism as a modern movement (quite regardless of its "anthropological roots," or its "adumbration" in Protagoras) arose as the direct sequel of the problem of knowledge as this was set by Descartes and Locke. Kant, it will be recalled, spoke of the "problematic idealism" of Descartes, and the "dogmatic idealism" of Berkeley. It is my contention that the latter developed directly out of the former, and that this motive was so dominant as to render others negligible for the purpose of any general survey. It is my contention, furthermore, that, despite his attacks on Descartes and Berkeley, Kant and all his works arose as a further sequel to this same problem of knowledge, and that it is only in this connection that one can understand the meaning of that "objective mind" which constitutes the central conception of latter-day idealism.

What, then, was the Cartesian problem? To justify or account for the belief in an external world from the standpoint of the individual consciousness. Once construe the world as self and ideas (ideas being the data of introspection), and there is difficulty in construing the world otherwise. The standpoint of self-consciousness is like the proverbial tar-baby. Once you take hold of it, it is impossible to let go; the more you struggle the more hopelessly you are entangled; and every member or instrument that you use to free yourself is itself caught and stuck fast. Clear and distinct ideas, the veracity of God, faith, preestablished harmony, causality, belief, common sense, and categories, are tried successively as means of escape, only to be ensnared themselves. Idealism ceases to be "problematic" and becomes "dogmatic" when the philosopher ceases to struggle and makes a virtue of what he formerly regarded as a predicament.

It seems to me perfectly clear that in the course of this whole movement from Descartes to Kant, inclusive, the peculiar relativity of some sense-data is of minor consequence and ambiguous import,

<sup>2</sup> *Ibid.*, pages 674-675.



as compared with the presence to mind, and hence ideal status, of all sense-data together with the objects of thought as well. With Descartes, the inner world of thought and the outer world of extension are both established independently of the relativities of sense. These are then given a tertiary status as neither of mind nor of body. Descartes's proximity to idealism, as is proved by the sequel in Malebranche, is due not to his rejection of the secondary qualities from the corporeal world, but to his initial inclusion of the primary qualities within mind. Locke, it is important to observe, does not start with objectivity of all qualities, and then prove the subjectivity of the secondary, but begins with the subjectivity of all qualities and proves the objectivity of the primary. "It is evident the mind knows not things immediately, but only by the intervention of ideas it has them." Among these ideas, the primary qualities are distinguished by the fact that "their patterns do really exist in the bodies themselves."<sup>3</sup>

Now I submit that it is more significant for idealism that all sensible qualities should be initially ideal and only problematically external, than that some sensible qualities should prove less amenable to externality than others. Berkeley and Hume arrive at idealism by the simple step of abandoning as hopeless the attempt of Descartes, Malebranche, Locke, and others to prove an outer material duplicate of the qualities immediately before the mind. It is true that Berkeley is at some pains to show that the primary qualities are in the same boat with the secondary qualities, and that if the latter are to be construed as mental on account of their relativities, the same construction must be put on the former.<sup>4</sup> But it is evident that Berkeley does not rely on this argument as a proof of idealism. "Let any one consider those arguments which are thought manifestly to prove that colors and tastes exist only in the mind, and he shall find they may with equal force be brought to prove the same things of extension, figure, and motion. *Though it must be confessed this method of arguing does not so much prove that there is no extension or colour in an outward object, as that we do not know by sense which is the true extension or colour of the object. But the arguments foregoing plainly show it to be impossible that any colour or extension at all, or other sensible quality whatsoever, should exist in an unthinking subject without the mind, or in truth that there should be any such thing as an outward object.*"<sup>5</sup>

<sup>3</sup> "Essay," Bk. II., Ch. IV., VIII.

<sup>4</sup> This resemblance of primary and secondary qualities may argue either the subjectivity of the primary, or the objectivity of the secondary. Cf. Holt, "New Realism," page 353.

<sup>5</sup> "Principles of Human Knowledge," Fraser's edition, Vol. I., page 265. (The italics are mine.)

In short, the argument from the relativities and aberrations of sense is ambiguous as respects what it proves, and gratuitous as well. "For, to what purpose is it to dilate on that which may be demonstrated with the utmost evidence in a line or two."<sup>6</sup> The direct argument which short-circuits this prolixity and proves the ideality of the material world at one stroke, is, of course, the appeal to the ideational status, and consequent inseparability from the mind, of all that is known. With Hume this conviction that idealism is self-evident has grown even stronger. Hume, too, employs the school-boy arguments—which he refers to as "trite topics employed by *skeptics* of all ages against *the evidence of sense*."<sup>7</sup> But it must be remembered that Hume, unlike other modern idealists, was himself an avowed skeptic, and was more concerned with the skeptical import of his argument than with idealism. And like Berkeley's it is evident that his idealism is implicit in his starting-point and method, so that it has only to be pointed out and not proved. Common-sense realism "is soon destroyed by the slightest philosophy, which teaches us that nothing can ever be present to the mind but an image or perception."<sup>8</sup>

The attempts made by Hume and his immediate successors to escape from what are supposed to be the skeptical implications of idealism confirm my interpretation of its historical origin. Reid explicitly attributes idealism to the pernicious doctrine of representative ideas, and proposes to effect a return to realism by rejecting the doctrine. Hume himself, and Kant after him, retains that doctrine. For them the external world must be and remain the idea of the external world. Hume shows how this idea is built up and how it works. It is a natural and useful idea. But Kant goes further and maintains that it is a necessary idea, and that the various subsidiary ideas, such as causality and substance, are similarly necessary. One can not even think the internal world, as Hume proposed, without presupposing the external world with its primary character of order and permanence. The result is that the "categories" become the ideas not of a particular or psychological mind, but of a general or logical mind. And thus there arises the original and distinguishing feature of post-Kantian idealism, the super-psychological mind "presupposed" by cognition. I submit that it is entirely impossible to understand this last variety of idealism, this curious extension of consciousness beyond the individual, this novel

<sup>6</sup> *Ibid.*, page 269.

<sup>7</sup> This is Lovejoy's quotation, *op. cit.*, page 675. The italics are mine. It is not to be inferred from Professor Lovejoy's criticism that I have failed to note Hume's appeal to sense-aberrations. On the contrary I have expressly called attention to it. Cf. "Present Philosophical Tendencies," pages 137-138.

<sup>8</sup> "Enquiry Concerning Human Understanding," Part I., §12.

reconciliation of the "objective" with the subjective, unless we suppose Kant to start from the Cartesian-Lockian position that what is immediately before the mind is *ipso facto* of the mind. I can not see that the question of sense-aberrations is of the least consequence in understanding the growth of this movement, or the form which idealism has assumed in the writings of our immediate teachers of the Anglo-Hegelian school.<sup>9</sup>

A second historical error of which Professor Lovejoy convicts me is the confusing of the epistemological and religious motives in idealism. He credits me with having "seen with unusual clearness that there is no true logical inference possible from idealism as such (*i. e.*, phenomenalism) to a morally inspiring and religiously fortifying view of the universe," and then goes on to say that it is "a little curious" that, having perceived this "logical disjunction," I should "imply that religious optimism is the logical essence of idealism."<sup>10</sup> Since Professor Lovejoy has comprehended the matter so clearly, and since, if I am not greatly mistaken, we are here in entire agreement, it is evident that I have not made my meaning clear. Let me try again. I have never meant either to assert or to imply that religious optimism is the "logical essence" of idealism, or that there is a "true logical inference" from phenomenalism to religious optimism. I meant to impute to idealism the very confusion which Professor Lovejoy imputes to me! I meant to say that the epistemological and religious motives were *arbitrarily* united in idealism, not that they were successfully, consistently, or necessarily united. It appears to me that if we observe the main contours of nineteenth-century thought we find that its most striking feature is the attempt to refute naturalism and justify religion by the epistemological argument. Material substance being eliminated, the world must derive its structure from some other source. Since the data of experience are primarily facts of consciousness, it is natural to look for their ground in the nature or laws of consciousness. And however much it may prove necessary to depart from the vulgar notion of consciousness in order that it may fulfill its cosmic function, there will always remain the impression that man participates in its triumph; that through the supremacy of this his prerogative man is himself

\*It is this same tradition that accounts for the difference between the contemporary neo-Kantian logic and that of realism. For the former, categories are the "condition of experience," for the latter, they are entities of maximum generality, or occupying the fundamental place in systems of fact or being. In some cases this difference seems to reduce to little more than one of word. But I can not free my mind wholly from suspicion. Cf. Dr. Mason's suggestions toward a compromise in the *Philosophische Abhandlungen* dedicated to Cohen (1912), page 55.

<sup>10</sup> This JOURNAL, Vol. IX., page 634.



exalted, and may confidently trust in the conformity of things to the pattern intimated in his own ideals. Now this seems to me to be the rôle assumed by idealism in the popular thought of the nineteenth century, and to be the rôle which it still fills in the judgment of the general public. Even idealism of the positivistic type lends a certain support to religion, in that its unknowable banishes the specter of a hopelessly alien material world, and is faintly tinged with the conscious character of its phenomenal effects. As for Schopenhauer and Bradley, whom Professor Lovejoy cites as exceptions to my generalization, the former is a by-product of the movement, influenced by Oriental thought, while the latter, with his conception of the all-harmonizing spiritual unity which serves as ideal and standard of value, is a case in point.<sup>11</sup>

## 2. THE EGO-CENTRIC PREDICAMENT AGAIN

Professor Pratt's criticisms<sup>12</sup> afford me a double justification for what is always a pleasant occupation, the riding of a hobby. In the first place, this critic admits that I am "probably right in holding that the crux of the whole matter is to be found here in the 'ego-centric predicament.' " In the second place, his reflections on the subject convince me that, though I have discovered a disease, I have not yet made the remedy wholly effective.

Let me restate my view of this matter. The relation of things to the inquiring mind is unique in that this relation is instituted whenever anything becomes an object of inquiry. This fact proves embarrassing only when one seeks to discover whether this relation itself is a necessary, or only an accidental, relation. The fact that the relation can not be eliminated without bringing the inquiry to an end makes it impossible to employ the rough empirical test of "difference." But this proves nothing as to whether the relation is necessary or accidental; it simply forces us to employ some other method.<sup>13</sup> The other method which I propose is to discover precisely, in what respects consciousness is determinative of its objects—so that when present it may be credited with what it is really responsible for, and no more. This requires a theory of the specific nature of consciousness and its operations; and enables one to use conscious-

<sup>11</sup> "Appearance and Reality," Ch. XXVI., *passim*.

<sup>12</sup> "Professor Perry's Proofs of Realism," this JOURNAL, Vol. IX., pages 573 ff.

<sup>13</sup> The same thing, of course, holds true of my attempt to discover whether *my* consciousness is necessary to its object, for I can not eliminate *my* consciousness without bringing the inquiry to an end. And "that nature does not depend altogether on the individual consciousness" is, according to Professor Pratt, "irrefutable" (*ibid.*, page 579). Yet he does not show us how I am to prove that nature is in some respects independent of my individual consciousness.

ness for the purpose of explanation when it is relevant and neglect it when it is not.<sup>14</sup> With this brief preamble let me attempt to remove certain misunderstandings to which this view has given rise.

Professor Pratt appears to have grasped almost nothing of my meaning. In the first place, he confuses *independence* of consciousness with *absence from* consciousness. "For it is hard to see," he says, "how observation can ever lead us to the *unobservable*, or how experience can ever prove the *unexperienced* and *inexperienceable*. The truth is, that we are all in the ego-centric predicament, no matter how little we like it—the realist along with the rest of us—and if we are ever to get out of it and prove the existence of 'neutral entities' in an 'independently existing environment,' it will not do to 'forsake dialectics and observe what actually transpires.' 'What actually transpires,' at any rate when observable, is not in the 'independently existing environment.' Observation will do the realist very little good," etc.<sup>15</sup> Now, I see no excuse for such confusion. My primary contention has been that in order to discover whether "being experienced" is essential to its objects, we should examine the specific character of this "*being-experienced*." We are to examine it, of course, by experiencing it. In this case "being-experienced" is itself being experienced. In other words, a second instance of "being-experienced" is introduced. But to argue dependence from the mere presence of this second instance is to beg the question. We must interpret this second instance by the results of our examination of the first. If we discover from our study of the first instance that "being-experienced" as such does not determine its objects, then, and then only, shall we be warranted in neglecting the second instance. Knowing something of what it means to experience or to be experienced, one may then know what importance, if any, to attach to the fact that one is instituting the experience relation in the course of examining it. In other words, the fact that I experience must be construed in terms of the experience-process as this is itself specifically experienced.

If this is kept clearly in mind most of Professor Pratt's difficulties are rendered entirely gratuitous. The "neutral entities" are not excluded from experience; for there is nothing in their being experienced that is prejudicial to their independence. It is not very "hard to see how such neutral and independent entities could ever become a part of any human philosophy." One may safely assent to "the central position which *experience* must have in knowledge," and that "all human philosophy which has meaning for us must be

<sup>14</sup> For idealists, consciousness, being credited with all that it accompanies, tends to become utterly indeterminate and meaningless.

<sup>15</sup> *Ibid.*, page 579. (Italics mine.)

ego-centric."<sup>16</sup> For this is all beside the point. But how far is the ego-centricity which is characteristic of knowledge, being scarcely more than another name for the same thing, *imputable to things*? Or how far may things enter into cognitive and other relations with an ego, without forfeiting their independence? This, the important question, can be answered only after one has examined the nature and implications of such ego-centric relations.

Professor Pratt's discussion of these matters is confused by his wholly naïve use of the term "experience." I have learned this by dint of persevering reflection upon certain statements which he evidently regards as fraught with decisive significance. He speaks of "a thing, all of whose characteristics borrow their meaning from experience," of "the essential nature of things" as "experiential," and would settle the whole matter by "simply" raising the question "whether the real can be conceived in any other than experience terms." This question of the meaning of "reality," he assures us, "has no terrors for either the idealist or the pragmatist. For them both reality is to be expressed in experience terms."<sup>17</sup>

Now one hesitates to disturb the simple piety with which this shibboleth is regarded. But it is perfectly clear that if our doubts are to be hunted down there is no surer place of apprehending them than on this sacred ground. Which of two things does Professor Pratt mean by "experience"? Does he mean *that which is, such as is, experienced*? Or does he mean the fact, relation, or process of *being experienced*?<sup>18</sup> It is clear that the quality "blue" is different from "my experiencing blue." When Professor Pratt speaks of experience, does he mean the former or the latter? It is only by using the term in the former sense that his arguments have any weight; and then they have no bearing on realism. It is only by using the term in the latter sense that his arguments concern realism, but then they have no weight. Professor Pratt should reconsider the whole matter in the light of this distinction; and the same course may be recommended to those pragmatists and idealists who enjoy such comfortable relations with reality. If experience is a distributive and denotative name for all things that have been experienced, then, as a definition of reality, it is a silly verbalism. If by experience is meant the activity of experiencing, or the passive state of being experienced, a specific and distinguishable factor of the world, then the question of its ontological centrality or necessity becomes a

<sup>16</sup> This last sentence, with its triple redundancy, deserves preservation in any museum of philosophical curiosities. *Ibid.*, pages 575, 576.

<sup>17</sup> *Ibid.*, pages 574, 577, 580, 585.

<sup>18</sup> For a thorough overhauling of this nest of confusion, cf. Montague, "The New Realism," pages 256 ff., 294 ff.



debatable and significant question, but only when it has been defined or isolated for the purpose of study and discourse.

Let me turn now to the common objection that the realist is "hoist with his own petard." Professor McGilvary, in his last utterance on the subject, expresses doubt whether I have myself succeeded "in escaping the embarrassments" of the ego-centric predicament. His doubt arises from the fact that since I assert that "every mentioned thing is an idea," I can not mention or believe in anything but ideas.<sup>19</sup> In view of Professor McGilvary's generous and sympathetic attempt to understand my view I am compelled to admit that I must have stated it obscurely, and I attempt a restatement with the heartiest good-will.

In the first place, I do not pretend to escape the embarrassments of the ego-centric predicament. These embarrassments are peculiar to the problem. I propose to avoid arguing from these embarrassments. It is not given to me any more than to any other man to mention a thing without thereby endowing that thing with the character of "being mentioned." But I contend that this in no way argues that the thing's being so mentioned is necessary to its nature or being. And I propose to test the latter question by discovering what "mentioning" means, so that I may know how much of the thing to attribute to that fact, or how far I may neglect that fact despite its presence. I conclude from the nature of the mentioning operation that it does not, for example, determine the mass of the sun; so that, though I mention the mass of the sun, mass of the sun is nevertheless independent of being mentioned. Having established this fact, I might, were my experience inclusive enough, proceed to mention everything, without in the least adding to the necessity of the mentioning process for the things mentioned. It would be possible for my mind to expand to omniscience and then be removed altogether without affecting the things known. In a certain sense, I am willing to concede, everything has been mentioned already, in so far as one has said "everything." The important question is to determine whether everything is to be explained by its being mentioned, whether one is to look for the ground or the principle of things in the nature of the mentioning mind.

No importance attaches in this connection to a precise use of the term "idea." In the context from which Professor McGilvary quotes I am using the term loosely to mean whatever is immediately before the mind, or is mediately referred to by the mind, or is used as an instrument by the mind. If it were proved that relation to mind in any one of these senses were the condition of being, idealism

<sup>19</sup> Review of "Present Philosophical Tendencies," *Philosophical Review*, Vol. XXI., pages 466-467.

in the broad sense would have been proved. Hence I do not regard Professor McGilvary's positive suggestions, enlightening though they may be in other respects, as pertinent to the issue. He suggests that the difficulty could be avoided "if the realist would distinguish between an idea and its object, and would maintain that a thing does not become an idea when one thinks about it. We could then think about things that are not ideas, and think about them as not being ideas."<sup>20</sup> In the first place, this last possibility is open to us on my view. Unless Professor McGilvary has made a slip he must see that because a thing becomes an idea when we think about it, it does not follow that we can not think about things that are not ideas or think about them as not being ideas. If  $a$  becomes idea by being thought about, *i. e.*, by entering the relational complex  $(a) R (T)$ ,  $a$  is idea by virtue of its relation to  $T$ . I can then think of  $a$  as idea only by instituting another relation between this complex and a second act of thought. To maintain that I can think only of ideas would be to maintain that thought is only of the form  $[(a) R (T)] R (T)$ , which, of course, is far from my meaning. In the second place, what has Professor McGilvary to say to an idealism formulated as follows: "Everything must be thought about, or be object of idea, in order to be"? Is it not evident that the whole case for realism is left where it was at the outset, and that this question as to the precise cognitive import of ideas is beside the point?<sup>21</sup>

It is felt, somehow, that the realist, in asserting that there are things that are not known, is contradicting himself.<sup>22</sup> He reaches this conclusion by such reflections as the following: (1) that "unknown" does not argue "unreal"; (2) that the history of knowledge, individual and social, argues the limitedness of knowledge; (3) that things and events have systematic relations and causal connections independent of knowledge. So he concludes that there are more things in heaven and earth than philosophy has dreamt of.

<sup>20</sup> *Ibid.*, page 476.

<sup>21</sup> I have felt entirely free as a realist to accept within certain limits the pragmatic distinction between the idea and its object in mediate knowledge. So long as idea and object are both of them independent and immanent, the fundamental theses of realism are no more jeopardized by instrumentalism than they are proved by it. So far as I know, no philosopher has been so hardy as to deny that signs, words, symbols, and even images, may be used by the mind as substitutes for certain other things which they are said to "mean." Professor Lovejoy for some reason finds this inconsistent with realistic premises. Cf. *op. cit.*, page 681.

<sup>22</sup> It is pertinent to observe that the difficulty, if such there be, exists in exactly the same form for every philosopher except the solipsist. Most idealists probably believe that there are things that they do not know. But here as elsewhere more is expected of a realist than of his opponents. I for one appreciate the subtle flattery which this implies.

Now if his critics object to this statement as inaccurate, by all means let it be amended to read: It is probable that there is a class the members of which are related to knowledge as was the planet Neptune before the year 1846; and other things of which one knows only that they lie in directions defined by laws or systems a part of whose domain is already known, etc. Will this do? And of what earthly or heavenly importance is this except as an incentive to knowledge! Once it has been established that knowledge is accidental rather than essential, the fact of our ignorance, like the fact of our knowledge, is, for the explanation of the things themselves, entirely negligible.

### 3. THE PROOFS OF REALISM

I have been repeatedly charged with having failed to offer positive proofs of realism, or with having begged the question at the crucial moment. Now in the first place, it is to be observed that idealism and realism are so related that if idealism is false, realism is true. Therefore the criticism of idealism has peculiar weight. Furthermore it is generally admitted that common sense is realistic—and that were there no shred of evidence for idealism, realism would be presumptively true. Professor Lovejoy, despite his avowed rejection of the "Berkeleyian arguments," nevertheless apparently feels that they create a presumption favorable to idealism. The ego-centric predicament points to the impossibility of proving realism. The fact is, however, that the clear understanding of the nature of that predicament shows that the difficulty of proving realism is an artificial one, created by the error of philosophers. The ego-centric predicament is not merely the co-presence of consciousness with all objects of inquiry, but *the introduction of consciousness by the act of inquiry*. When one sees how and why the predicament arises, one sees that the presence of consciousness in this peculiar manner is an accident of method and as such must be discounted. One is then thrown back upon science and common sense, which habitually disregard consciousness in the explanation of most objects, and so virtually affirm and reaffirm realism at every turn. Professor Lovejoy argues that at any rate the principle of parsimony tells in favor of idealism;<sup>23</sup> whereas this principle, as Hume pointed out, argues the precise opposite. A single persistent and independent thing is a simpler supposition than a series of things created and annihilated with the fluctuations of consciousness.

The fact is that without the supposed support of the ego-centric predicament idealism has rarely, if ever, been attempted. For unless one can argue from the immediate and self-evident ideality or experiential character of all objects before the mind, one must argue from

<sup>23</sup> *Op. cit.*, page 674.



the specific dependence on consciousness of specific things. One must, in short, have a theory of consciousness and show how logical, mathematical, or natural objects may be explained in terms of it. If we can not argue from the subject-object relation as a constant character of cognition, we must argue from consciousness as one object among the rest, and show that its relations to other objects are such as to constitute it their universal and necessary condition. The attempt has been made to show that consciousness is the generating source of relation, and that as relations are universal and necessary, so is consciousness as their author. But it is extremely doubtful if this claim would have been made for consciousness without the fallacious inference that objects of thought are *ipso facto* the creatures of thought. And in any case the claim is neither justified nor even clearly formulated.<sup>24</sup>

Then there is the argument to which Professor Lovejoy attaches so much importance, the argument for the subjectivity of the aberrations of sense-perception. Now, in the first place, it is only in an obscurantist sense that secondary qualities and illusions are supposed to be subjective. So long as "subject" is itself not scientifically formulated it serves as a back yard in which the sweepings or the original disorder of experience are kept out of sight without being wholly denied. In this sense "merely subjective" means only "not yet explained." It is interesting to observe that with Descartes, who begins with a conception of the subject, these same poor homeless outlaws are foisted upon the bodily world. They are no more readily explained in terms of the nature of subject than in terms of the nature of the external world. They are the nondescript, the *tertium quid*, the mixture, the relation, and so far as they serve as a nucleus to which the remainder of experience is reduced, the result is not idealism, but relativism or skepticism.

On the other hand, so far as secondary qualities and illusions have been explained, they have been construed in terms of a relation between a physical environment and a reacting sentient organism. Thus construed they have given rise to the theory that over and above the organism and the environment there is a series of entities that are a function of a specific relation of organism and environment. This is the epiphenomenalism of popular science. Now this is not idealism, because it explicitly identifies consciousness with a dependent and derivative function of the primary physical world. Nor can it be transformed into idealism without denying its premises, abandoning its empirical evidence, and losing all of its explanatory value.

<sup>24</sup>I have discussed this argument for idealism in "Present Philosophical Tendencies," pages 156 ff. None of my critics has taken exception to this passage.

The objections to epiphenomenalism itself I need scarcely rehearse. The essential point is that it fails to account for knowledge by construing it as a depository of states effected by an outer physical cause that can not *ex hypothesi* itself be known. Idealism and neo-realism are both attempts to provide for an immediate knowledge of reality by identifying reality with the objects before the mind. But what has the question of secondary qualities and illusions to do with this issue? The same problem arises on either realistic or idealistic premises. What is the relation between the normal and the abnormal experience? What is the relation between the quantitative and the qualitative elements of nature? Does color belong to the same order as extension and mass, or is it a specific function of a sentient organism? How comes it that the color appears to be "out there," spread upon the extension? How is the illusory experience related to the object as defined by science? Are the answers to these questions any clearer on a pan-idealistic basis than on a pan-objectivistic basis? And if they drive us back to dualism with its peculiar difficulties, shall we not then have passed from the new realism to the older and classic realism? I am entirely unable to see any peculiar merit in idealism in connection with these problems, except the merit of obscurity. And I say this in all seriousness. There has somehow come to prevail the belief that difficulties disappear if you bring them within consciousness. This is due, in my opinion, to the fact that those who have generalized and extended consciousness and have most emphasized it have taken least pains to define it. Consciousness being obscurely conceived, difficulties grow less when relegated to its shadow. How the same stick which is straight in the absolute mind, or in organized experience, should appear bent to finite mind, is a question scarcely worth considering. But how the same stick that is straight out of mind should appear bent in mind, drives us in despair to—idealism.

In a recent criticism of Professor McGilvary Professor Lovejoy states his objection as follows: "To most men—to nearly all men, until the new realism began to flourish—nothing has seemed more evident than that many things appear in consciousness neither *as* they are nor *where* they are nor *when* they are; and that consequently it is only by regarding much of the content of consciousness as subsisting solely in and for consciousness, that any marginal region of purely objective and independent being can be believed in at all. In this large, but seemingly inevitable admission of common sense, idealism has found its foothold."<sup>25</sup>

But the general argument of realism is as follows: (1) "Appear in consciousness" requires explanation. It must be translated into

<sup>25</sup> "On Some Novelties of the New Realism," this JOURNAL, Vol. X., page 32.

terms of fact, and not remain merely a convenient subterfuge. What happens when *a* "appears" to *M*? (2) "Appearing" would seem empirically to consist in a relation located in, and exemplified by, the nervous response of the organism. (3) How shall we account for diversity of appearance? The only positive results secured thus far have been obtained by noting the manifold parts, sides, perspectives, relations, etc., of the thing which appears, and by noting that the nervous response selects and combines these in a variety of ways. (4) No light whatsoever is thrown on these questions by enveloping the whole in consciousness, for the diversity of the appearances to finite minds of the real object of the absolute mind is the same problem in different terms. (5) Therefore this problem can not itself be invoked as evidence for the theory of the universality of consciousness.

In short, the current discussion of the problems of perception has nothing to do with the comparative merits of realism and idealism. Realism is in no sense peculiarly responsible for these problems. Idealism, in urging these problems, is indicting itself as much as realism; and more, since realism is at least attempting to solve them. Such theories as have been advanced in the "Proceedings of the Aristotelian Society," and by Holt, Montague, and Pitkin in the "New Realism" are not a defense of realism against idealism.<sup>26</sup> They are attempts at constructive thinking in regions in which idealism has simply defaulted. If idealists do not accept these theories it behooves them as philosophers to advance other theories. And Professor Lovejoy will forgive me if I say that it is reasonable to expect from one as little indoctrinated as he some similar constructive effort. These are not matters of controversy that can be argued in terms of the old battle-cries. They are questions of empirical fact which press upon all philosophers alike and afford philosophy a great opportunity of usefulness, especially in relation to natural science. I hope that Professor Lovejoy's hat will soon be in the ring. Why keep us longer in suspense, when his "pluralistic idealism based upon the dialectical arguments"<sup>27</sup> may remove all our difficulties?

I submit, then, that the problems of perception do not argue idealism; but that, so far as appeal is made to these problems, and so far as science or philosophy has advanced toward their solution, the implications are realistic rather than idealistic. But how is the issue between idealism and realism to be decided. It is my contention that we must examine mind (*M*), and some thing (*T*), to see whether when *M* knows *T* (expressed by the relation  $R^k$ ), (*M*)  $R^k$  (*T*)

<sup>26</sup> I might add also my article on "The Knowledge of Past Events," this JOURNAL, Vol. III., page 617.

<sup>27</sup> *Op. cit.*, page 677.



does or does not condition *T*. If there is any other way of deciding the issue, I should be grateful to any one who will point it out to me. That such procedure should be regarded as question-begging seems to me to indicate a fearful suspicion that the outcome is going to be contrary to one's preconception. I have proceeded, then, to examine the nature of mind, and have recorded such results as I have obtained. These results seem to me to show that when an entity is object of consciousness it enters into a new relation of which certain other relations, sufficient to determine it, are independent.

The *Nation* has the hardihood to accuse me of dogmatism because I say that "consciousness is a selective response to a preexisting and independently existing environment." "The 'independently existing environment,' " my critic proceeds, "independent, be it remembered, not only of your mind and mine, but of all mind, and essentially non-psychical—has to be assumed or dogmatically asserted, if it is to be had at all. Doubtless these 'neutral entities' . . . may exist. But we have as yet been offered not a single reason for supposing that they do" (!)<sup>28</sup> This is too bad! After having painfully elaborated my evidence for defining consciousness as I do, to be accused of dogmatic assertion by one who pays no attention to the evidence! After having carefully explained why I regard the definition of consciousness as decisive in the matter of the dependence or independence of things on consciousness, to have it coolly asserted that I have not offered a single reason for supposing the existence of independent entities! Such criticism is as impertinent as it is futile.

For the clarification of this issue I wish that some idealist would, after all that has been said on the subject, carefully restate his proofs, and that some non-sectarian philosopher, such as Professor Lovejoy, would formulate what he would regard as a crucial test or a cogent proof of either idealism or realism. And while I have the floor let me add the request that our critics, if such they must remain, criticize our theories in detail, by pointing out wherein they fail to take account of fact, and by proposing counter-hypotheses that will fit the facts better. There are at least two great sets of problems that are non-sectarian problems, the problems of perception, and the problems of the fundamental concepts or categories. Let us become fellow workers in these fields; or at least let us be constructive critics, and discontinue the practise of simply aggravating our common difficulties and then urging them against the first venturesome person that is bold enough to attempt to overcome them.

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<sup>28</sup> *The Nation*, Vol. 95, page 285.

## DISCUSSION

## PROFESSOR COX'S "CASE METHOD" IN ETHICS

PROFESSOR COX'S vigorous paper on "The Case Method in the Study and Teaching of Ethics"<sup>1</sup> will be welcomed by those who are weary of the abstract character of much of the traditional ethics. Ethics, it will be gladly assented, must be a science before it is a philosophy; that is, it must, like any science, come equipped with its fund of pertinent facts. The facts with which ethics is concerned are decisions of a certain type. In the end, to be sure, the ethical question is, what *ought* the decisions to be. But preliminary to answering this question, particularly of any of the social conflicts that present themselves in contemporary life, it is essential that the ethical student know in large measure what the typical decisions of mankind have been. One might as well ask a student to study the phenomena of electrical action without acquainting him with the accepted methods and theories that have been wrought out in the physical sciences, as to ask him understandingly to discuss the principles involved in a case of moral conflict without giving him a broad knowledge of the trend of past social judgment.

A knowledge of the facts about social judgments is, therefore, unquestionably a preliminary to ethical study. Professor Cox's insistence upon this and his description of a novel method for realizing it are therefore to be heartily welcomed. But it must be remarked that such a study is not the study of ethics, but only a preliminary to such a study. It seems to the writer that Professor Cox does not keep this sufficiently clear, and so weakens the force of his otherwise important contentions. "In considering a case of murder, theft, arson, adultery or other, the student gives testimony himself as to the unmistakable judgment of society—not his own opinion or the *opinion* of a judge, but the imposition of a penalty which has been enforced. There is not even a question whether it *should* be enforced. It has been—*voilà tout!*"

There is here a fine scorn of the "ought," troublesome concept that it is, involving us in all manner of disputes and preventing that clear consensus which is the sign of objectivity. "Historical cases, properly attested, alone give us the means of objective judgment." Such objectivity, however, would seem to be purchased by the author at the altogether disastrous price of surrendering ethics for history. I can not feel that Professor Cox means to sell out for so cheap a mess of pottage; but his paper is seriously ambiguous upon this point.

<sup>1</sup> This JOURNAL, Vol. X., page 337.

There remains, too, the difficulty that history, for all its seeming security, is not a consensus. If the student examines carefully, he finds different social decisions among different peoples at different times. If he pursues his inquiry up to the present, he discovers the contemporary social decision. How shall such varying history serve him in his effort to find the objective moral law? The fact is that all the while that the student has been studying the historic judgments, he has either been making upon them his judgment of "ought," *i. e.*, his judgment of moral value, or he has been utterly unable either to discover the moral trend of the historic succession or to pass judgment upon the contemporary situation. Thus, all the while, he has, perforce, been judging of the "ought." Never for a moment—if he is a student of ethics—has he said to himself: "It has been—*voilà tout!*"

So much for ethics *versus* history. A word of criticism seems in point as to the "case" method itself. Excellent as the method is for bringing moral situations vividly before the student's mind, there would seem to lurk a serious danger in its too exclusive use. The method prides itself—and with some justification—upon being scientific; but, if too narrowly employed, it falls short of being scientific in a true sense. The social fact in a case of conflict of interests which is of deepest significance for ethics is not the social decision in and by itself, but the far-reaching social results of the decision. Herein is found the objective test of the decision's moral worth. Was the blood feud a moral way of settling quarrels? Let the disastrous social results attest. But if the student is to study not only cases, but the social results of cases, it means in effect that he is to study, in all its pertinent features, the history of civilization. And this is indeed the only adequate preliminary to the study of ethics, a preliminary which Dewey and Tufts have so admirably attempted in their text-book.

There is indeed a specious finality about this study of cases that has already wrought much mischief in the sister science of law. It is a notorious fact about legal learning that it is, in the main, both narrow and dogmatic. The principle of *finding the decisions* has held the lawyer's mind to the narrow consideration of the decided facts and has made him loath to seek broader and deeper considerations for his judgments. To-day we are asking that in legal training the study of "cases" be supplemented by a more comprehensive study of social facts and forces. It would be sad if ethics, intrinsically the broader and deeper science, in envy of the apparent certitude of her arrogant sister, should copy methods that would ill befit her own broader and more humane function.

And finally, one is led to doubt whether in restricting the study of ethics, in the main, to *decided cases*, *i. e.*, cases in which a constituted



authority has adjudicated, one is not limiting the scope of ethical inquiry altogether unduly. A great many of the issues of prime social and individual import never come to a court of adjudication; *e. g.*, most of the moral problems involved in family life, many questions concerning industrial and political relations, not to speak of well-nigh the whole range of moral problems of individual life. These overtly undecided questions are at once the despair and the hope of ethics. It is in the struggle with them that the ethical student waxes strong.

Yet it must be said in defense of Professor Cox's method that ethical teachers have been strangely unaware of the great fund of material that lies ready to their hands in legal literature. Particularly is this true of the "case" literature of America, where the principles of liberty and contract find rich exemplification. A great service could be done to ethics by the preparation of such cases for classroom use.

But the writer confesses to some smittings of conscience. Professor Cox's paper is so virile and so ingenious in its effort to make ethics real that it deserves commendation rather than criticism. But criticism perhaps will be the most effective means to tempt the author to further elucidation. The paper does not indicate clearly the character of the cases studied (whether merely legal, or more broadly social, or even individual), the sources from which they are drawn, the kind of examination to which they are subjected for *ethical* purposes, and the type of *ethical* conclusions drawn. All these things we ethical teachers who are weary of old ways are eager to know. Certainly we must welcome this paper as one more sign of the growing scientific seriousness in the study of ethics. Only, in the zeal that is rapidly developing to have away with the old, some of us fear at times lest the baby be poured out with the bath.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Interpretation of Religious Experience.* The Gifford Lectures delivered in the University of Glasgow in the years 1910-12. JOHN WATSON. Two volumes. Glasgow. 1912.

These two volumes of Gifford lectures on the "Interpretation of Religious Experience" are an expansion and completion of what Professor Watson has dealt with in a series of previous publications, notably in his "Christianity and Idealism" and his "Philosophical Basis of Religion." As in these previous writings, so here, Professor Watson has given an

exposition and defense of neo-Hegelian idealism. To what extent, in the present state of philosophical discussion, is such an attempt likely to be significant and convincing? A reading of the present volumes has left upon the reviewer the impression that any such attempt is the more likely to succeed the less one falls back upon the traditional and somewhat overworked phrases which have played so important a part in the armory of the Hegelians. Such expressions as the "unity which differentiates itself," "the true nature of intelligence as essentially self-differentiating," the "contrast between the absolute which excludes and which includes all differences," "the rational unity of all things as the supreme principal of religion and theology"—such expressions seem not quite as well fitted to bear the brunt of idealism's defense as they did in the monumental work of Caird and of Green. Of course, if they were true and significant a generation ago, they are true and significant now, but their repeated use becomes a trifle wearisome, and lends color to the wide-spread, current rejection of idealism as scholastic and verbal.

There is another general comment upon the method of these lectures as a whole. One would expect, in two volumes dealing with the "Interpretation of Religious Experience," a specific account of what the religious experience is, and of how it is to be distinguished from experience at large, from scientific experience, and from esthetic experience. But no such attempt appears here to have been made. The first volume is an historical survey of theologies and philosophies of religion from Plato to Hegel. The second volume is a criticism of all of the chief non-Hegelian metaphysical systems, such as radical empiricism, realism, naturalism, personal idealism, and a defense of absolute idealism. Only incidentally, and somewhat more in the last chapter on "The Invisible Church and Immortality," is anything said about the content and meaning of religion, as distinct from experience at large. The "Interpretation of Experience" would, it seems, have been a more appropriate title. It is of course true that absolute idealism does not lend itself readily to the attempt to distinguish specific characteristics of anything short of the whole, since any and every experience but points the way to the Absolute. But surely, religious experience is *not* the same as *scientific* experience, or experience at large; there are "sources of religious insight" which another absolute idealist has written about; there are characteristic things which the religious mind wants and is aware of, and even if, *in the end*, religion covers the whole of experience, it does not do so either in history or in finite experience.

It would be neither profitable nor fair to criticize the historical lectures without keeping constantly in mind their place in the work as a whole. Everything before Hegel is appraised with reference to its nearer or remoter approach to Hegel's philosophy of religion, with an exposition of which the first volume closes. This procedure leads Professor Watson to omit a discussion of certain men which one would expect in an historical survey of the philosophy of religion. There is no mention of Schleiermacher even in the index. Fichte surely has as important a place in the

history of reflection about religion as have Locke and the Deists. Both of these men could have been included without passing beyond the chronological limits which Professor Watson imposed upon himself. And in the discussion of Plato, of early Christianity, and of Augustine, the question repeatedly arises as to how much is here left out because one considers and estimates these men and movements only with reference to their contribution to the "essentially Christian idea of a self-manifesting and self-conscious God," the idea that the world is a single rational system. This is all, no doubt, profoundly true, and Professor Watson has succeeded in making a single and connected story of a marvelously complicated movement. But that it is simplified and abstract (in the Hegelian sense) must appear when one compares it with such accounts as those of Harnack and Glover.

In the second volume, which contains the constructive lectures, there is much which is worth noting. There are valuable comments and important criticisms of contemporary ways of thinking. That there is a universal implied in all perception is clearly and rightly insisted upon as against radical empiricism, and the realism which gives a "first view of the world." One misses, however, a discussion of the new realism, which is neither dualistic nor nominalistic. Indeed, all of the polemical chapters lose in effectiveness because Professor Watson fails to see in contemporary radical empiricism and realism anything except a ghostly revival of already slain enemies. The past still bears down on us in our thinking, but there have been philosophers since Hegel. This comment does not, however, apply to the author's treatment of Bergson, of whom there is both appreciation and sound criticism. In so far as Bergson's philosophy is an irrationalism, he fails to provide for any significant creativeness and activity; in so far as Bergson does leave us with activity and freedom other than caprice, then "what M. Bergson calls intuition seems to me but Intelligence or Reason in its final form—with this difference, that the latter is reached only by a process in which all less adequate modes of conception are transcended."<sup>1</sup>

But after all, in the present state of philosophical polemics, what one most wants to know about any statement and defense of idealism is whether the author faces squarely the chief radical defects which current criticism has believed itself to uncover in absolute idealism. There is, on the one hand, the charge of "intellectualism," the prevailing opinion that the world of Hegelian idealism is only a *thinker's* world, and not an *actor's* world, and on the other hand is the criticism that absolute idealism might be shown to be true of any and every experience, and hence is irrelevant to the specific character of *our human* experience. As for the latter point, Professor Watson himself says that "to admit the reality of anything whatever, however apparently insignificant, is to assume the reality of a rational and intelligible universe."<sup>2</sup> The neglect to distinguish between religious experience and experience at large, which I mentioned

<sup>1</sup> Vol. II., page 177.

<sup>2</sup> Vol. II., page 41.



at the outset, points in the same direction. As for the former point, Professor Watson is indeed aware that critics of "intellectualism" usually proceed by defining reason as a very barren sort of process, and then, naturally, warn us not to expect anything fruitful from it. But one wishes that he had undertaken more specifically to show how the active deeds of men are a "manifestation of the single absolute principle," the apprehension of which constitutes religion. But in spite of such inadequacies, these volumes remain a notable and significant reminder of the continued vitality amongst us of the Hegelian tradition.

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*Die Stetigkeit im Kulturwandel.* ALFRED VIERKANDT. Leipzig: Duncker and Humblot. 1908. Pp. xiv + 209.

All the changes of our social life, however great and abrupt they may appear, may be dissolved into a long train of relatively small steps, or insignificant events. This is what is here meant by the term continuity. Only when this position is adopted, contends the author, is it possible to discover within the stream of social evolution a "mechanism," or to submit its phenomena to scientific presentation. In sociology, as in mathematics, physics, geology, and biology, the modern scientific method starts from the infinitely small.

Part I., *Historischer Teil*, attempts the inductive proof of this position. In Chapter 1, with regard to inventions, Dr. Vierkandt brings together information from many branches of science, especially anthropology, to show that these have proceeded by small steps, whether in prehistoric or in recent times. He supports the same thesis with regard to customs, speech, and political life (Chapter 2), and religion, science, and art (Chapter 3). The material collected is interesting and impressive, though of course it hardly is possible to prove that every innovation has proceeded thus gradually.

Part II., *Psychologischer Teil*, deals especially with that factor in social advance which commonly is termed spontaneity, the sudden insight of genius. After showing the emphasis that psychology now places upon the coherence, the accumulative or "historical" structure of thought, Dr. Vierkandt would prove that the marvelous ease and swiftness of adjustment which mark the genius are always a matter of long and hard acquisition, that new ways of thinking do not spring into being without long preparation. Even the abrupt transitions of emotion, such as that which in Rousseau seemed at a flash to open the vista of modern democracy, are now interpreted as the maturing of conditions that long have persisted beneath the threshold of the conscious life.

In Part III., *Soziologischer Teil*, *Der Mechanismus des Kulturwandels*, the author, resting on his main thesis, attempts to describe the general characteristics of all social movements. There are always three factors, the ripeness of the community in its mental and moral life, the exigencies of the community, and the initiative of the leaders. It is clear that he regards the second of these factors as the important one, and so

pays little attention to the others. The needs and demands of the community are, as a rule, extremely various, trivial, and even base in character. From a mass of insignificant elements the great and splendid movements of history are made up. Ideals which animate its leaders may give the movement its name, but they are not its spring and power. The proofs of this position are not offered in sufficient number nor with analysis keen enough to convince. This part of the work abounds in such classifications as the following: Cultural changes may be either exogenous (acculturation) or endogenous, abrupt or gradual; they may affect the essential or the unessential. Their causes are of four kinds—contact with other races, change of environment, change in the human material, as in increase or decrease of population, and, finally, where one cultural change produces another. The value of these divisions is not for the most part made apparent.

But the distinction made (pp. 65–67) between the lower and the higher forms of the “historical” or accumulative structure of thought is clear cut and suggestive of applications. In the lower type the method of thought is *substitution*, a formula or generalization taking the place of the richness of individual experience to which it refers. In the higher type, the method is one of *summation*: what is peculiar to the situation is distinguished by analysis, and in the synthesis a wide range of experience preserves its individual features. The latter method, while slower and more difficult, leads to adjustment; the lower type, which is the primitive and still the common type of thinking, tends rather to conservation and even stagnation. Though Dr. Vierkandt calls the higher type the scientific, does not training in the natural sciences usually fit the individual to deal with matters that are relatively simple in a manner that has long been marked out? It is the study of history, whether of man or of his environment, which demands that summation of the concrete, where concepts are rather the cement than the scaffolding of the resulting thought-structure, where a situation is grasped in its tendency and not simply in its relations.

As corollaries of his main thesis, the continuity of cultural changes, Dr. Vierkandt enunciates two principles: the immense importance of the trivial in human affairs, and the composition of the great out of the small. And these he would apply in the first place to encourage a more minute historical investigation and a wider cooperation of all branches of science and art in producing histories of peoples and of epochs that shall take account of all sides of life. This is the task of the future rather than the attempt to express the movement of society in terms of some one great tendency or law. There is no single tendency underlying or causing or even expressing the multitude of phenomena which make up the advance of civilization. Knowledge of social evolution comes only in knowing the many little things of which it is composed, and which it is.

Hence, without distrusting ideals, as “the eyes with which we view our deficiencies,” we must reject them as interpreters of existence. “All the noblest ideals of man’s life (p. 202), how uncertain is their hold in

the ceaseless sweep of life!" "The demand was made of the artist, for a certain measure of truth in his creation depends less upon a positive ideal than upon the uneasiness with which our habits of artistic appreciation are affected by certain departures from reality." "Indolence, custom, social or economic interests play the chief part in our lives." "He who plans great things must begin with the small, must be at home at once in the ideal and the real; and with unextinguishable enthusiasm must combine an impassioned sense of the actual." "The highest art and the supreme task of every man lies in allowing the appropriate pressure to operate not too little and not too much. For destiny is not unyielding, but is to be wooed. Our sober fortune lies in an attainment that leaves full play to unsatisfied longing."

The traditional philosopher of history will find little support in Dr. Vierkandt's work. But it seems that of the three factors which he has noted in cultural development, the first, the ripening of the community, is the field which such philosophers of history have selected for their theme. It also would appear to be the field in which continuity should be most apparent. None the less, it is not analyzed nor to any great extent illustrated by the author, who, in consequence, seems to achieve in a measure the negative rather than the positive effects of a perception of the continuity of history.

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## JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. March, 1913. *L'idée de Dieu et l'Athéisme au point de vue critique et au point de vue social* (pp. 151-176): G. BELOT.—"Every new affirmation of God presupposes a provisional and relative atheism. The fear of atheism is perhaps the most profound atheism." *Paul Tannery, historien de la science antique* (pp. 177-210): A. RIVAUD.—An appreciation inspired by the appearance of the first volume of collected writings of P. Tannery. *Platon et la science sociale* (pp. 211-255): L. ROBIN.—A study of Plato's ideas in relation to their counterparts in modern systems of sociology. *Discussions. Des propositions particulières et de le portée existentielle*: L. COUTURAT. *Logistique et intuition*: L. COUTURAT. *Questions pratiques. L'organisation de la République d'après les travaux de M. Henri Chardon sur la réforme administrative*: L. BRUNSCHVICG. *Supplément*.

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## NOTES AND NEWS

### AN INTRODUCTORY BIBLIOGRAPHY IN VALUE<sup>1</sup>

THE following list is constructed with a view to immediate usefulness and practicality, and the convenience of the usual alphabetical arrangement by authors is sacrificed for a greater convenience of a few hints as to the various main phases and tendencies in contemporary treatments of values. The list is far from exhaustive; and it includes mainly the more explicit treatment of the subject, as distinguished from philosophical or technical theories that only imply a value theory. Some groups are fairly well unified in spirit (especially schools, such as the pragmatists); in others the various works may have little more in kin than a common field of interest (especially classes of values, such as the religious). Some attempt has been made to list the titles within each group, and also under each author, in order of importance, historical or constructive. Asterisks denote a few works which will best typify the various aspects and tendencies or which will serve as good introductions to their respective groups.

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# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD<sup>C</sup>

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### EPISTEMOLOGY FROM THE ANGLE OF PHYSIOLOGICAL PSYCHOLOGY<sup>1</sup>

LAST summer I wrote an article which involved much of the material that I have incorporated into this paper, and then laid it aside for later comparison with more mature reflection. Since then I have read "The New Realism" by Marvin, Holt, and their colleagues, and find myself in substantial agreement with many of their fundamental positions. None the less, I feel that there is still a place for the rather simple scheme of thought which I have gradually developed through several years, and am glad of an opportunity to present it here, even though it may seem to some to be anachronistic.

Knowledge and reality are not identical. There is hardly any other distinction more important for us to make. The former, however, may be regarded as a part or phase of the latter, at least in the sense of actual. Any aspect of consciousness, be it the knowing process or what not, is real in the sense of being an actual occurrence, no matter how momentary it may be. Should we turn consciousness inside out, as it sometimes seems that the new realists would do, this last proposition might need modification, but, for my own part, I feel compelled to begin with my own consciousness, as psychologists generally insist that they must, when I deal with the most fundamental aspects of life, reality, or what you will.

I am well aware that when I take this point of view I seem to be landed in the solipsistic quagmire, and yet it is just this phase of the whole matter that I am inclined to deal with first. No chain is stronger than its weakest link, and I have felt the weakness of certain modern views at this very point.

It is, of course, true that no one of us begins as an introspective philosopher. We cut our teeth, have the measles, the whooping-cough, and perhaps our first love affair before we realize all the implications of our four-dimensional series of coexistences and se-

<sup>1</sup>Read at the annual meeting of the Western Philosophical Association at Evanston, Ill., March 22, 1913.



quences, but when we do introspect with proper rigor the world seems vastly different. Whether we will or no, there we are with our "stream of consciousness," as we call it, and all the outer world of which we were once so sure seems to have dissolved into the unsubstantial stuff of which our dreams are made. What shall we do? Many cut the Gordian knot and go serenely upon their realistic way with never a troubled thought, apparently, for the technique of their *modus operandi*. Their *ratio essendi* and *ratio cognoscendi* seem to be hopelessly mixed in spite of Kant's insistent warning. My own method of dealing with this problem, although it is but a simple one, seems to work, and runs as follows:

Whatever I find in my stream of consciousness, whether houses or lands, rocks, trees, fairy tales, or chunks of realistic philosophy, is apparently naught but consciousness when I give myself up to a real introspective debauch. I soon perceive, however, a seeming externality characterizing certain phases of the stream. This, of course, immediately contrasts with the rather pronounced subjectivity of the introspective panorama as such. What am I to do? Another aspect of the stream comes to my assistance. I find a tendency there to make guesses. I do not say that I myself am responsible. I simply find a kind of curiosity with reference to the changing aspects of the stream. Guesses are made and steps taken to verify. All this, I maintain, is in my stream. I am not attempting to think my way back to the innocent and innocuous semi-blankness of babyhood, where I should probably obtain no help for my problem. Instead, I am taking a cross-section of my adult consciousness and stating what I find. Many changing aspects of the stream are there, and an apparent externality, an internality, and withal a tendency to make guesses and to verify.

If some one else should not find what I do, he would need to devise some other method for extricating himself from the conscious flow of seemingly pure subjectivity. That there are apparently irreducible groups recent psychological studies would seem to indicate, which is, perhaps, a verification of Fichte's "idealists" and "dogmatists."

But, to proceed. I might assume, now, that the apparent forking of the stream is merely an illusion, and attempt to systematize the entire content of consciousness in accordance with some purely subjective principle. Any such procedure, however, continually ignores a constant aspect of the real, identified for the time being with consciousness itself. Furthermore, every step in my progress toward a consistent whole seems to be beset with increasing complexity. This, of course, does not refute such a system, but it does raise doubts which lead me, at least, to pause, and then turn in the opposite direction.

I make a new start, now, or try to, assuming that the seeming externality is the truly real and that the subjective is illusory. I do not get very far, however, in this direction. To assume that the external alone is real is to cut the ground from beneath my feet. I began with the stream of consciousness. In the last analysis, that alone is my warrant for presuming to speak at all. Otherwise, I am deaf, dumb, and blind, and might just as well be reckoned a stone or clod of earth along with the other varied but stolid impedimenta. To turn myself inside out, to reduce my stream of consciousness to the channel in which it flows, is to perform the highly sapient act of cutting off the limb on which I sat.

But one further possibility remains. I may assume that I am not entirely deceived with the seeming externality and internality, but that both are, in the main, complementary aspects of reality as a whole, and immediately the problem which previously seemed insoluble shows signs of rational cleavage and amenability to rational treatment. Undoubtedly other subsidiary problems appear which are not without their own inherent difficulties, as, for example, that "old man of the sea" the causal relation between the two, but with the major attitude decided upon, there is hope for an ultimately consistent account of the totality of phenomena without doing violence to either main division.

My next step is, I think, not quite the traditional one. Although such a dual view of reality has frequently been assumed, the initial step in epistemology has been an introspective one. Not a few writers have put the matter as follows: "Yonder is a stone in my field of vision. How do I bridge the seemingly impassable chasm between its objectivity and my subjectivity?" The answer has often been, "By an immediate grasp of the object through my outgoing subjectivity. Unless we get reality in this immediate first-hand way, we never get it." To me, however, this seems a kind of hocus-pocus. My own procedure is quite different. Why should I select a stone or any so-called inanimate object? I much prefer to experiment with an object that I call a human being. There in my field of vision is an object which strongly resembles my own physical self, which, I presume, I may be pardoned for speaking of in this anticipatory way. What theory can I develop to account for the relation of that individual to the objects in his field of vision which seem to be identical with objects in my field of vision, and to account for the aspects of his stream of consciousness which resemble my own as he states them to me?<sup>2</sup>

It is here, as it seems to me, that physiological psychology and

<sup>2</sup> I use simply the visual phenomena for illustration. The same method of reasoning would apply in the case of any or all of the other sense fields.

contributory sciences lend assistance. We can figure out the relation of the ether waves to the retina, follow the optic nerve to the cortical cells in the occipital region, and note that something peculiar happens then which seems to be qualitatively distinct from what preceded. It is true that science is not satisfied with qualitative appearances and seeks by further analysis simpler units, but this should not blind us to the reality of those appearances.<sup>3</sup> Further analysis means metaphysics, but the knowing process may not ignore what is immediately given. We assume atoms and electrons in the physical world, but the objects with which we immediately deal are trees, stones, and animal forms. We analyze our consciousness very minutely and assume simpler elements underlying those aspects which immediately appear. A very nice problem here is whether the fundamental elements are all qualitatively alike or unlike. The world-theories of Democritus and of Anaxagoras are here pitted against each other. But whatever the solution of this problem may be, we certainly ought not to ignore the appearances of things as they parade themselves before us in our conscious stream. They are real in the sense of actual, just as real as anything seemingly more substantial which we may assume in the external world.

The assumption, then, at this point, of a dual series in the case of the human object that we are considering would seem to meet the situation. In my field of vision are many objects which are certainly external to the physical self of the individual before me. He may change his physical relation to them and they remain apparently unaffected. He might die and be cremated, but the other objects remain the same. Just as certainly, too, as that there are such objects external to this individual whom I am studying, may I assume, upon the basis of his introspective account, that there is a stream of consciousness within him, at least within the periphery of his body, most likely, it would seem, in connection with his brain. The physiological data for this view, I need not introduce here. Now, if we assume that events objective to this individual have their correspondences in his stream of consciousness, like the pushing of a button which is followed by the flash or steady glow of light, we have a sufficient working hypothesis. We may not say at present, apparently, how the registering in consciousness comes about, nor in exactly what respect the conscious element differs from the physiological process, but that there is such a qualitative difference I can not deny.

I realize full well that what I have just stated is rather trite, simply parallelism, but epistemological rather than metaphysical parallelism. The causal relation between the physical and the psychical I do not touch.

<sup>3</sup> Cf. Holt, "The New Realism," page 329.



With this programme before me, developed in such an objective way, I make the obvious application to myself. Upon the basis of my physical resemblance to the individual studied and many others, I assume that such a dual series solves my epistemological problem. It is, of course, true that when I open my eyes and appreciate the immediacy of the objects in my field of vision, it does not seem as if there were a complicated physiological process between the objects and my apprehension of them. But how is it when I look toward the sun from time to time? It certainly seems as if the sun moves from east to west. Here is a direct conflict between things as they seem introspectively and things as they are when taken in a larger way. So, too, with the mirror and the virtual image recently used to illustrate consciousness.<sup>4</sup> If we depend simply upon introspection, we have difficulty with the situation. If, however, we view the matter with reference to some one else, it becomes apparent at once that the only image in the ordinary sense is on the retina of the beholder's eye. We must, then, assume the same for ourselves, even though introspection tells a different tale. The situation is the same with the immediacy of any of our visual experiences. Since light travels nearly 200,000 miles a second and the nervous current about 100 feet a second, we have practically instantaneous experiences, and they seem such, to the entire discredit introspectively of any complicated intermediate physiological apparatus. But if we find the apparatus in others, we can not avoid explaining our own experiences in that way in spite of the illusory seeming.

Let me touch the whole matter, now, in a somewhat larger way. Because of what I seem to find true of others, I am forced to assume a dual series to explain the thing we call knowledge, so far as I myself or others may be possessed of it. There is a subjective series and an objective series. Both are real in a true sense. The former, however, does not seem to be a duplicate of the latter, but rather representative of it. If we call the subjective entities symbols and those of the external series objects, we shall have little difficulty in systematizing the content of our conscious stream, and shall avoid not a few troublesome traditional connotations. It is especially worthy of note that I do not regard these subjective elements as copies, simulacra, or anything necessarily suggestive of a likeness. They are simply psychic happenings which mean objects or events or groups of either or both in the external series, or earlier subjective elements. It is, of course, also true that propositions are formed from these symbols and that these constitute our knowledge technically so-called. The test is the pragmatic one, as to whether or not they work.

<sup>4</sup> Cf. Montague, "The New Realism," page 289.

Both of these series have gaps in them, so far as I am personally concerned, and I assume the same in the case of others. As a child, the gaps in my internal series were exceedingly numerous, many of which have been filled as the years have passed; as a child, too, there were entities in my subjective series which had no corresponding objects in the external series, as, for example, ghosts and various graveyard horrors. In the childhood of the race, the same has been true. Wingèd lions, mermaids, and centaurs figured in the imagination of primitive peoples, but science has found no objects in the external series to correspond with those subjective symbols. And one thing further we must not overlook. Not infrequently entities in the subjective series have been objectified. The sculptor's dream, the architect's vision, and the engineer's imaginative constructs have taken bodily shape in the external series, modifying the face of nature and marking the progress of the race. What we call nervous substance, especially as massed in the brain of man, seems to be nature's offspring designed to transform nature herself. On the subjective side, there are ever new constructions, of which not a few become objectified and thus fill the gaps that existed presumably from eternity.

And this process, we may well assume, is an eternal one. Not, of course, for myself. I do not mean that. But each individual sustains this twofold relationship, each has the task of establishing a close correspondence between the two series, so that the subjective gaps may be reduced to the minimum and the objective gaps be filled so far as each individual may be productive. The individual, also, has the task of eliminating from his subjective series elements that have no correspondence in the objective series, or at least he should label them as purely subjective, and not expect them to function in the ordinary affairs of life. They are real in the sense in which I have used that term, but they constitute only one end of a relation, if that be not too paradoxical an expression.

These two series, all too briefly treated, may be summarized in a quasi-mathematical way. If we let small  $a_1, a_2, \dots, a_n$  stand for symbols in the subjective series, each meaning a definite object or occurrence in the objective series, which might be designated small  $x_1, x_2, \dots, x_n$ , respectively, then large  $A$  would be the ideal limit or sum of all possible knowledge, and large  $X$  would be the ideal limit or totality of what is knowable in the universe, and since each small  $a$  stood for or represented a small  $x$ , large  $A$  could be regarded as standing for or representing large  $X$ . The time, however, when such a complete representation of one by the other might occur it is not possible to predict.

In conclusion, I may say that I am well aware that such terms as

“representational,” “dualistic,” “correspondence,” and “parallel-istic” may be used in criticism of what I have presented. None the less, I raise the question, Does it not fairly well meet the situation? We talk very glibly about the universe and assert that, since  $2 + 2 = 4$  within the circle of our experience, that is a fundamental characteristic of the universe everywhere. But how far does our knowledge extend? I do not mean our assumptions, but our knowledge. I sometimes suggest to my students the following measuring-stick for our spatial and temporal surroundings. Take 999 decillion factors each of which is 999 decillion miles raised to the 999 decillionth power. Place one end of a stick of that length at the center of the earth and then spin the old ball around in every possible direction. The other side, so to speak, would not be touched anywhere. We may substitute “years” for “miles” in the same expression and point toward the past and future. Neither beginning nor end would we be likely to reach. How much do we actually know about our environment? How trustworthy are our assumptions based upon our actual experience? And yet we continually speak in very emphatic terms. We work out systems of absolutist philosophy upon the basis of exceedingly relative experiences, and we use absolutist logic in the development of realistic theories of knowledge. Our body of actually tested knowledge is comparatively very small, and that of which the knowledge is an interpretation may itself be undergoing change.<sup>5</sup> It seems to be a decidedly fluid universe with which we have to deal. A theory of knowledge which makes provision for such fluidity would seem to be a real desideratum, even though it might be unsatisfactory in not a few respects. What I have given is, I think, of this sort. It does not insist on any conditions that might hamper the investigator, save what the investigator himself finds and values. It takes gratefully from each investigator and adjusts itself to facts. It appropriates, provisionally, what seems to be true, and enlarges its borders thereby. Knowledge thus grows from little to much. Chameleon-like, it changes with changing conditions. It apparently approaches an ideal limit, but would not be dismayed if assured that no such limit exists.

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<sup>5</sup> Cf. Höffding, “The Philosophy of Religion,” page 68; James, “Pragmatism,” page 259.



## DISCUSSION

THE STUDY OF MORAL JUDGMENTS BY THE  
CASE METHOD

PROFESSOR GEORGE CLARK COX, of Dartmouth, has recently outlined the grounds for a conviction that the method of case study long employed by teachers of law may with profit be adopted for the study and teaching of ethics.<sup>1</sup> To aid in the adaptation of this method he suggests the preparation of a collection of the original sources of the moral judgments of society, after the fashion of the case-books of judicial opinions prepared for students of law. His discussion seems to indicate that in such collection he would include only those social judgments which are to be discerned from social action. With the difficulties involved in determining what social judgments are moral in their nature, he does not deal. He evidently feels that discrimination is necessary, for he says: "The case method seeks to know what the law is; and nothing is presupposed unless it be that the cases considered are known in common speech to come under the general heading, moral."

Manifestly such sources of social judgments as legislation and judicial opinion will not only fail to cover the entire field of ethics, but will embrace much that is commonly regarded as outside the pale of that study. No satisfactory criterion can be discovered in the sources themselves, as those jurists know who have struggled vainly to distinguish what is *malum in se* from what is merely *malum prohibitum*. Yet for the scientific moralist the distinction seems important. Rebaters go to dinner parties where no pickpocket would be invited. Society passes an essentially different judgment when it hangs a man for murder than when it fines a boy for riding a bicycle on the sidewalk or forbids recovery on a note unless the action is brought within five years from the day the note fell due. Clearly the fields of law and of morals are not coterminous.

As it is not safe to infer moral condemnation from legal prohibition or regulation, so it is equally dangerous to assume that the group approves of what it does not punish. In some jurisdictions adultery is not a crime. Parsimony and a prejudice against inquisitiveness are but two of the many non-moral considerations which militate against legal prohibition of many acts clearly regarded by the dominant element in the group as morally reprehensible.

These suggestions, however, do not touch the main thesis that the examination and comparison of actual recorded cases of social moral

<sup>1</sup>"The Case Method in the Study and Teaching of Ethics," this JOURNAL, Vol. X., page 337.

judgments is valuable for the study and teaching of ethics. The difficulties which arise by reason of the content of the subject-matter can be guarded against. The task might prove a valuable philosophic exercise. And the success of the method of study and instruction would not be seriously impaired if something non-moral crept in for observation and treatment. There is no indication that Professor Cox is endeavoring to alter any existing conventional limits to the field of ethics. He is concerned rather with the substitution of an empirical method for a metaphysical one, in the hope that from the fundamental likenesses in the ethical judgments of various peoples he may discover certain binding rules of conduct. To those for whom such a hope is illusory, he suggests that "if it should appear, after wide experimentation by many observers, that there is no universal basis for ethical teaching, the result, for all except the morally feeble-minded, would still be valuable." His proposal can be discussed without caring, for the moment, whether objective moral principles will emerge or not.

#### I. THE CASE METHOD OF TEACHING LAW

What has been the value of the case method as applied to the study of law? It used to be a fond saying at the Harvard Law School that the case method does not teach us the law, but that it gives us the legal mind. May it not also give us the ethical mind, even though it leave us somewhat hazy about any formulation of ethical principles? Professor Cox insists that every teaching of ethics should be adapted to make men ethical. If by this he means, to give them the ethical mind, to make them skilled in passing ethical judgments, in differentiating between different ethical situations, he is not likely to meet with contradiction. With such a capacity at one's command in each concrete situation, it matters little for practical purposes whether one can formulate general laws or is versed in the formulations of others. It has been judicially declared: "General propositions do not decide concrete cases. The decision will depend on a judgment or intuition more subtle than any articulate major premise."<sup>2</sup>

That this system of case study furnishes valuable training in this subtlety of judgment or of intuition is generally conceded by those most familiar with it. At every stage the student is called upon to observe differences and distinctions, and, what is more difficult and more important, to evaluate them. Knowing nothing of any general rules applicable to the subject-matter under consideration, he reads a number of selected cases involving some definite class of individual

<sup>2</sup> Mr. Justice Holmes, in *Lockner v. New York*, 198 U. S. 45. For lawyers, it is important that this was in a dissenting opinion.

or social interests, such as contracts for personal service or injuries in dangerous employments,—cases which may profitably be compared with each other. In the class room, the student to whom a case is assigned states what he deems the material facts, the issue, the decree, and the reasons given therefor. The general discussion may be postponed until other cases have been stated. The instructor then puts supposititious cases. Fact after fact will be altered to make opposing cases more nearly correspond, to make cases which seem parallel diverge from each other. And at every point the student is required to weigh for the purpose of decision the importance of difference and resemblance. Each case is discussed from the stand-points of the soundness of the reasoning and the wisdom of the result. The various cases are compared to determine whether they can stand together. Conflicts of decision are recognized and the exact point of difference is ascertained.

Respect for judicial authority does not prevent the class-room recall of judicial decisions. The student must give his own judgment. Distinctions which the court disregarded are exalted. Resemblances and analogies discovered by the court are ruthlessly condemned as fallacious. The rapier of reason does not fear to pierce the ermine.

After the separate cases have been thus analyzed and conflict of decision has been marked out, there begins the work of weaving together the various strands. Having decided what is the correct decree for each given state of facts, the student attempts to formulate a principle which shall embrace them all. If it is not important that one case concerned an individual, another a partnership, and a third a corporation, the rule may be stated more broadly than was necessary to express the holding of any one decision. For some purposes it is important whether a promise was verbal or in writing; for other purposes, not. Hence a general statement may be made to mark out the line of difference. Conflicting rules are evolved from conflicting decisions. And when the rules are thus formulated, the process of putting the specific cases from which they were derived is repeated and the accuracy of the formulation is tested by the way the cases fall within it or without.

When the formulations are tested by the stuff from which they were made and are duly arranged in order, new cases still remain to be put. Deduction now succeeds to induction. The existence of the rule is assumed and attention is devoted to its application to situations not identical with any from which the rule was evolved, situations which have not yet arisen in the courts for adjudication. With the wider outlook, the student may now judge the rule by the way it would work if applied more generally. He is thus placed in a position to pass beyond the questions whether the decisions are consistent



with each other and whether the formulations of general rules are accurate, and to suggest where judicial opinion should be corrected by legislation. For this high function he has a comprehensiveness of view and a capacity of judgment which could never be acquired by committing to memory the statements of legal principles set forth in a text.

Such is the method of instruction out of which evolves the legal mind, the capacity to distinguish and evaluate for the purpose of decision the various elements in concrete situations. Thus is the prospective lawyer fitted for his task. He employs in the class room the same processes of thinking which he must use in the office and before the court. He forms legal judgments by a process of legal reasoning.

## II. LEGAL REASONING

The value of the case system of instruction can be better estimated after a consideration of the methods of legal reasoning. For the most part the methods of legal reasoning are the methods of all reasoning. The lawyer deals with facts, as the layman deals with facts. He has regard for the judgments of legal tribunals upon analogous situations as the layman pays heed to the judgments of others to whom he looks for guidance.

It is not essential to the discussion of legal reasoning to know with precision what for non-legal purposes constitutes a fact. In one of Birmingham's novels it is said that to a judge, a fact is no longer a fact, after a duly constituted court has found to the contrary. For the purpose of reaching a legal judgment by the appellate tribunal, the facts are those findings of the trial court which are disclosed by the record. But it is to be observed that in passing judgment on the situation disclosed by the record, many other facts or circumstances of a more general nature are important, though they were not in issue between the parties. For example, if the question before the court is whether an offer was accepted in due time, it is important to consider what are the existing means of communication. Due time in days of the stage-coach and the sailing-vessel is to be estimated by different tests than is due time in the days of wireless telegraphy. In criticizing a legal judgment, it is important to be familiar with contemporaneous tacit assumptions.

The record from the court below not only fails to give all the facts which must be taken into account, but it may include a number of facts which may at once be dismissed from consideration, because not relevant or not important to the legal problem to be solved. Minds will differ as to what facts are material to the issue before the court. Facts which are significant for one purpose are not for another. For example, take the rule of law that a statute relating to cities is a

general and not a special statute if it apply to all cities of a class, though not to all cities in the state. Do seaside resorts constitute a class? The question can not be answered except with reference to the particular legislation dealing with such cities. For the purpose of police regulation it may well be that the fact that such cities contain a small permanent population and have a large influx of temporary visitors in the summer entitles them to be regarded as a class distinct from other cities, whereas from the point of view of some measure relating to education they could not be thus set apart. The question of what constitutes a proper basis for classification can not be decided generally. It can not be decided in specific instances without a familiarity with many circumstances which may not at first glance appear material.

No general formula can be given for comparing the facts of one case with those of another adduced as a precedent. Some of the facts of one case seem to be identical with some of the facts of another. But no fact is completely isolated. It must be judged in its relations to other facts in the same situation. Most of the facts selected for comparison are found to be different from each other. This difference may be so great as to amount to direct and complete opposition. In other instances there may be some element common to both facts, so that they can not be regarded as completely opposed to each other. This distinction between mere difference on the one hand and opposition on the other may be criticized as somewhat tenuous, but it is a distinction which must be taken into account. The question presented by the distinction is doubtless one of degree; but so are most questions. The greatest difficulty arises when the facts in different cases do not seem comparable with one another. But in some fashion the total situations must be compared.

Legal reasoning embraces something more than the comparing of one case with another which is sought to be enthroned or dislodged as a precedent. After formulations of general principles have come to be regarded by the courts as established law, the lawyer must fit his case into some general principle. When there seem to be conflicting general (?) principles, he must argue the merits of one against the other. Often there will be two formulations whose general terms do not disclose that the application of one would require a modification of the statement of the other. Take, for example, the rule that no state shall make any law impairing the obligation of contracts, and the rule that the legislature of a state has complete control over the dissolution of municipal corporations. These two rules do not appear at first glance to conflict with each other. But when a concrete situation is presented, some facts will seem to bring the case within one rule, and some within the other. The dissolution

of a municipal corporation may leave its creditors with their claims unpaid and their debtor non-existent. A choice must be made. And since in orthodox legal theory cases must be decided in accordance with general principles, the case at bar must be forced within one rule or within the other. But what of the elements which went into the discard? Were they really negligible because they wouldn't fit into the principles? Or must the ancient formulations be rejected and a new structure laboriously reared? Or, perhaps, is it true that general propositions do not decide concrete cases? Some light appears from another utterance of Mr. Justice Holmes: "All rights tend to declare themselves absolute to their logical extreme. Yet all in fact are limited by the neighborhood of principles of policy which are other than those on which the particular right is founded, and which become strong enough to hold their own when a certain point is reached. . . . The boundary at which the conflicting interests balance can not be determined by any general formula in advance, but points along the line, or seeking to establish it, are fixed by decisions that this or that concrete case falls on the nearer or farther side. . . . It constantly is necessary to reconcile and adjust different . . . principles, each of which would be entitled to possession of the disputed ground but for the presence of the others."<sup>3</sup>

After distinctions between the facts of different situations have been made, the distinctions must be evaluated. A study of precedents indicates what evaluations have been made. But all too seldom does it disclose how they have been made. This is the most baffling problem in legal reasoning. For the measuring-rod is seldom disclosed. It may be doubted whether the one who estimates the differences is himself aware of the standard he employs. The methods of mathematics are unavailing where the units are not of the same order. No two cases are on all-fours. Every case presents a novel situation. Suppose a precedent: five facts, *A*, *B*, *C*, *D*, and *E*; decree for the plaintiff. Another precedent: five facts, *M* (not *A*), *N* (not *B*), *O* (not *C*), *P* (not *D*), and *Q* (not *E*); decree for the defendant. A new case arises for decision: five facts, *A*, *B*, *C*, *D*, and *Q* (not *E*). Within which precedent does the new case fall? It may well be that though the facts of the third situation correspond with those of the first and conflict with those of the second in four out of five particulars, that the one point of accord with the second may be so important that decree should be for the defendant rather than for the plaintiff.

And here the crucial question: "Why so important?" Without doubt many judges have sought for some metaphysical test in order to construct an ideally consistent system of legal theory. But seldom

<sup>3</sup> *Hudson County Water Co. v. McCarter*, 209 U. S. 349.



have they been uninfluenced by considerations of the way the rule selected would work out in practise. Indeed they have often employed their fictions and abstractions to attain the end chosen from practical considerations. In nearly every decision it is possible to discover the application of some standard of public policy or of fair dealing between man and man. Will the declaration of the rule on which the decree is based tend to promote good economic and social conditions? The question concerns not only the application of the decree to the case under adjudication, but the application of similar decrees in analogous cases. But the finding of the measuring-rod is not yet attained. There appears the possibility of an infinite regression. We must ask how the court decides what economic or social conditions are good, how it decides what tends to promote such conditions. Well may Mr. Justice Holmes say: "The decision will depend on a judgment *or intuition* more subtle than any articulate major premise." Those to whom has been revealed the secret of the mental processes of the judges know that often the decision is first agreed upon and the reasons discovered afterwards.

But these intuitions, if intuitions they be, are trained intuitions. Their application is safeguarded by subsequent reasoning. Account is taken of many intuitions revealed by the decisions of others and so far as possible of the considerations by which the intuitions are influenced or controlled.

Such are the more important steps in the process of legal reasoning. The lawyer trained by the case method has acquired by actual practise a skill in his intellectual art which equips him for the work he has to do far better than could any method of instruction which lays chief emphasis upon inculcating a knowledge of general principles. He may stumble when called upon to give a definition. But no client asks him for a definition. He has learned what elements to consider in solving a concrete problem, and how the various elements are to be judged. He has learned to formulate a rule from concrete instances. He has learned how to know whether a given state of facts comes within that rule. He knows how the rules came to be formulated; that they arise from a similarity of decision in analogous cases; that the decision in each case is based upon some judgment as to what should be done with the situation disclosed in that case. So he knows that if general facts or theories tacitly assumed in that case no longer exist or obtain, a case which seems to be on all-fours with the earlier case as it was stated really involves a new and different state of facts. He can thus not only distinguish his case from another which may appear to afford a precedent, but he is aware that the formulated rule based on the earlier decisions has, if stated to-day in the same general terms, a

new and different meaning. It is therefore not a rule to apply when the facts which gave it form exist no longer. It expressed men's judgment upon a situation which is no more. It is a structure which should fall now that its foundations are gone. The law of gravitation can with profit be invoked. The structures of men's minds have a pernicious habit of self-support after their only legitimate foundations have vanished.

### III. THE VALUE OF THE CASE METHOD TO THE STUDY OF ETHICS

So much for the methods of legal reasoning and the system of case instruction. It must be apparent that the judgment which one may make as to his own action or the action of another in any situation which may be regarded as presenting a problem of morals is to be reached by methods substantially similar to those employed in reaching legal judgments. It would seem to follow that if training by the case method is beneficial to one who must make a legal judgment, so must it aid one to face and solve a problem of morals. And from the point of view of training, it matters little if many of the cases selected for study involve questions which philosophers have not agreed to regard as ethical.

The foregoing analysis has missed its mark if it has not disclosed many analogies between legal situations and those which are ethical. Every case calling for the exercise of a moral judgment is in some respects unlike every case which has preceded. And the differences must be discovered and evaluated in order to know whether an earlier case furnishes a precedent in point, to know whether the rules formulated from a multitude of prior instances are properly applicable, or whether, like some rules of law, they are mere structures in the air with no substantial foundation. And in this evaluation of differences, the standard in some vague and ill-defined way must be how the action based upon the judgment will result, whether it will make for those qualities of personal character and for those social conditions which are to be deemed good.

A possible difference is here to be noted between ethical and legal judgments as to the test of goodness. The court must consider how a rule formulated on the basis of a particular judgment will work if applied generally. For the binding force of precedent is ineradicably interwoven into the legal system. But there may possibly be moral situations where each individual may be his own supreme court with power to decide each case on its own merits alone. He need ask only how this particular action will result. Where the situation is entirely unique, he need not think in terms of general rules. He need not fear the establishment of precedents that will present themselves later to bind and hamper. But if his action

affect his fellows, he can not expect society to take the same point of view. Society will tell him that it can not view his act as an isolated act. It will talk to him of the force of example, and inform him that it can not permit to a man of intellect and self-control what it would be dangerous to allow to the weak and undiscerning. For those who are feeble may assume that they are strong and so imitate their betters to the harm of the social body.

In passing moral judgments as well as in the case of legal judgments, one does well to know all the facts which may possibly be material and to view them in the light of the particular issue which is presented. The moralist as well as the lawyer needs some criterion in determining what for his purpose constitutes a fact. His several facts will not be found in isolation. Facts in different situations which seem to be identical will on more careful analysis be found otherwise. Many facts will prove little susceptible to comparison. The one who must pass judgment on an actual rather than on a hypothetical moral situation must combine the functions of trial court and appellate tribunal. He has no record duly certified from a court below to relieve him of responsibility for what will often prove the most difficult part of his task.

A word remains to be said as to the reasons advanced by Professor Cox for the adoption of the case method in the study of ethics. He looks to the possibility of arriving through this means of study "at an objective ethics whose authority over all men would be equal and imperative." He refers to the respect paid by "all intelligent and instructed adults to the laws of the physical sciences" and adds: "If there should be found, upon investigation, laws as absolute for man's successful continuance in society as there are now for his successful resistance to the forces of nature, exhortation of every sort would give place to instruction. . . . If there be an objective morality which no intelligent man can disregard, its value will be incalculable. We shall know *what* to teach at least." His hopes for the outcome of the quest may be surmised from the assertion that with the fundamental likenesses in different systems of ethics "the natural inference would be that there is *an ethics* which could be generalized from them, giving us a rule of conduct binding, not from without, but in the very nature of conduct itself." His faith in the possibility of discovering such absolute laws in the realm of morals seems unshaken by his later conclusion that "no universal law has been found except that each organism or organization applauds its upholder and condemns its threatener."

Suppose that some such "universal law" is "found," and many others likewise. What profit have we? Will this make men moral?



Will it aid them greatly in ascertaining in concrete situations what upholds and what threatens the social organization? It does not make men ethical merely to know a formulation, however well founded it be. No formulation works automatically. None can be applied mechanically. This, Professor Cox seems to recognize, in part, in his statement that "the only *ought* is the intelligent recognition of the place of all interests and prudent adaptation to them." But no stress is laid upon the value of the case method for training in this power of intelligent recognition and prudent adaptation. A wise and discriminating formulation (term it, if you will, a "general principle") is one of the elements which may be of service in reaching an intelligent recognition of conflicting interests. But it is only one element out of many which must be considered. To fix attention on one element to the neglect of the others may blind rather than clarify the moral vision.

Objection may be urged also against the attitude of Professor Cox towards the value of the possible discovery from the case system that there is no "universal basis for ethical teaching." "If there be no such objective morality," he says, "then it will be wise for men to choose their standards according to temperament and tradition. They will know frankly where they stand, where other men stand, and what may be done in the premises." And on this point he says nothing more! Hearty accord may be given to the statement that the conclusion whether an objective morality exists or not can be reached "only through a scientific study of actual human conduct" and never "through a theoretic ethics based upon a metaphysical system." But are we forced to conclude that the intellect, if it fail to discover an "objective morality," must retire and leave to "temperament" the task of making moral judgments? It can not be too strongly stressed that the aim of ethical teaching is to make men competent to differentiate and evaluate the various elements of the concrete situations upon which an ethical judgment must be passed. This is the principal criterion by which any method of study or instruction must be valued. Of secondary importance is the question whether it will enable us to discover general laws or to know that none exist.

That the application of the case system to the teaching of ethics has possibilities of incalculable service in training the capacity to form moral judgments seems beyond dispute. This alone justifies extensive experiment. Those who hope that it may result in giving us simpler and more definite canons of conduct may be sadly disillusioned. In the study of law it has not led students to believe that what is commonly termed "the law" is a clear and simple objective entity or that there are rules of law which may after wise selection

be mechanically applied to the solution of concrete problems, as a lever may be pulled to start a machine which then does its work without requiring further human guidance. Nor does this conclusion drive us to "temperament and tradition" searching for a "standard."

Needless confusion might be avoided if we would cease to press the possible analogy between the activities of nature and the decisions of men. Study of law by the case method does not incline one to liken the volitional judgments of the agents of society to the phenomena of the physical realm. Both furnish material from which men may generalize, and so make or discover what are called laws. But until the apple falls in one direction in Kansas and in the opposite direction in Nebraska, the parallel between the decrees of men and the observed uniformities of nature will be incomplete.

But there is a scientific *method* for law as well as for physics. The merits of the case system have been amply established by long service. So much is common to the nature of legal and of ethical judgments that the method which has proven valuable for the study of law may safely be applied to ethics. By this contribution of a scientific method to the study of ethics, the lawyer may render a signal and possibly unexpected service to the moralist who has often chosen so lightly to look to him for bad example rather than for precept.

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### A NEO-REALISTIC THEORY OF ANALYSIS

IT is perhaps dangerous to criticize the "new realism"; you are likely to be overwhelmed by a score of six to one. But though a sympathizer with the aims of the movement, I should like to play the part of "devil's advocate" for the moment. I have recently been interested to discover what may be the nature of analysis. But when I turned expectantly to Professor Spaulding's article on the subject,<sup>1</sup> I met with some disappointment.

M. Bergson bears the brunt of the attack in the article in question; an attack so interspersed with symbols that it has overawed several of the reviewers. Moreover, any criticism of the paper would not be a criticism of Professor Spaulding alone. When the realists give battle to the idealists on the field of logic, they remind me of an argument I once overheard between two youngsters of the age of four. One said to the other: "I can lick you." The other squared

<sup>1</sup>"The New Realism." Pages 153-247.

away: "You can not." "Well," said the first, "if I can't, I got a big brother what can." Now, in logical quarrels, the big brother of all the realists is Mr. Bertrand Russell. Professor Spaulding recurs to him for confirmation at all the difficult points, till it would seem the real protagonists in the article are Mr. Russell and M. Bergson. The real aim of the paper is, therefore, perhaps best stated as a vindication of the powers of modern symbolic logic to handle all questions concerning spatial and temporal continuity. But I seem to find the result unsatisfactory on three different scores: first, as a critique of Bergson; secondly, as an account of analysis; and thirdly, as meeting the difficulties involved in applying the mathematics of the continuum to the spatial-temporal world.

First, as to Bergson. I fully agree that M. Bergson ought to know more about symbolic logic. But we have only to read the criticism offered by Mr. Russell himself<sup>2</sup> to have awakened in us a desire that the realist critics might in turn perceive the strong as well as the weak points of Bergson. Bergson does not, as I understand him, deny either the possibility of analysis or the value of concepts, but he does deny the validity of most "analysis by concepts." Concepts, for him, are convenient artificial handles, by which reality may be grasped; and there is no contradiction in using them, any more than in using language, providing you remember that neither words nor concepts are identical with the entities symbolized. The most fundamental proposition of his philosophy is perhaps the statement that change is more simple than permanence. But this is not the denial of analysis; on the contrary, it is the affirmation of a new sort of analysis. All apparently permanent things are complex; analysis will reveal that they are due to a combination of changes. A motion may have natural limits, it may be complex,—such, for instance, is the case with the motion of walking, which is naturally broken into steps,—but it is not *per se* broken into an infinite number of points passed through. When, later, you put down your finger and say the moving body passed through *this* permanent point, the point thus designated as permanent is really the complex product of two motions, the first, continuous motion, and the second, motion of cutting across it. Professor Spaulding well insists that this possibility of cutting at any point is our best proof that the motion was not at that point discontinuous. But for Bergson the continuity was prior, and is not constituted by the cutting. Furthermore, I am not convinced that Bergson is logically compelled to an indiscriminate monism because he denies the adequacy of Professor Spaulding's type of "analysis." There is complexity in Bergson's world,

<sup>2</sup> *Monist*, Vol. XXII., pages 321 ff.



but he denies that the most "simple" existent elements are the mathematical points and instants. And so, I do not think Professor Spaulding's main purpose, that of refuting Bergson, has been accomplished.

But secondly, I am doubtful about Professor Spaulding's notion of analysis. Is it analysis at all, this theory of the continuum? Professor Spaulding speaks frequently of "modern analysis." I confess "modern analysis" looks to me very much like synthesis. The modern doctrine of the continuum appears, at first sight at least, to be an attempt to produce a synthesis of elements which shall correspond, as nearly as may be, to what the ordinary man, doubtless vaguely, calls continuity. There is a sort of irony in the language by which we designate our most thoroughly synthetic sciences, when we name them, for instance, "mathematical analysis," or "analytic mechanics." Of course it may be denied that mathematics is synthetic: it is a quarrel of long standing. Nevertheless, I, for one, can not agree that all of mathematics is contained within the first few postulates, and all the mathematician ever does is to draw out the endless complexity concealed in these, as the conjurer draws a succession of rabbits and brickbats out of a hat. The mathematician seems to me to be a builder of structures and systems. Therefore again I was disappointed when I turned to Professor Spaulding's article: its title promised "analysis," but the burden of the text was synthesis.

And then, thirdly, as to what is actually the theme of the paper, even here was I disappointed that Professor Spaulding did not deal more pointedly with those doubts which the theory of the continuum, taken as a whole, still leaves lurking in the minds of some of us. Let me run over the theory itself as expounded by Professor Spaulding, laying stress on certain points he passes by. Professor Spaulding begins with the series of whole numbers. At this stage in his paper he is not discussing the constitutive theory of relations. This is unfortunate. Instead he discusses the analysis of wholes into parts,—and his conclusion seems to be that there is no prior whole nor any analysis. Therefore the case is not illuminating for the problem of analysis. So it might have been better to discuss internality of relations at this point. For had I been called upon to name the most perfect example I could find of entities which are constituted by their relations, I think I should have mentioned first of all the whole numbers. The numbers seem to consist of nothing but their relation to other numbers. Conceive, if you can, of a number two which is neither following one nor before three. Indeed, the numbers are "separate" and "individual," but this is just that to which the de-

fenders of the internality theory "point with pride," as a beautiful example of the capabilities of their theory. The paper seems, therefore, to reveal here also a certain misapprehension of the real "bite" of the opposing arguments.

But recurring to the development of the continuum, we may remark that the rational numbers are really a series separate from the whole numbers, though built up of pairs of the latter. Logically they are not interpolated into the whole number series, though I fear Professor Spaulding's formulation might suggest it. They consist of all those pairs of whole numbers which do not contain a common factor, arranged according to a rule of "natural" ordering. Three-over-one may *thereafter* be correlated with the whole number three, but until that is done there are no natural divisions in the monotony of the rational series. The real numbers, in like manner, are the series of all the possible limits in the natural order of the rationals, and this series, in turn, is divided into stretches by being correlated with, but not interpolated into, the rationals. This real-number series is the "numerical continuum."

Now what happens when we apply this continuum to space? For one thing, it is obvious that the series in question contains no units of length, indeed in itself no suggestion of spatial extension whatsoever. The series which is contained in a long line and that contained in a short line are mutually indistinguishable. So it arises that some of us have a doubt, perhaps unjustified, whether what we commonly think of as continuous extension, as existential spatial continuity, is completely defined by equating it with a mathematical continuum. Or, to put it otherwise, in the space-series considered as a point-manifold, the points are "non-extended." Extension must, therefore, enter by way of the "organizing relations." But so long as these relations are those of the mathematical continuum merely, there is no distance; each point is an infinity of points distant from any other; nor is there any natural process of correlation with whole numbers, for since the points are indistinguishable from one another, there are no three-over-one's which can be conveniently correlated with three. Of course we can superpose upon the continuum a concept of distance, or its equivalent, defined in ordinal terms, but in the perceptual world there is something almost qualitative about spatial extension which still escapes us. Our mathematics has produced an imitation of space, but not space itself. It will be remembered that M. Bergson distinguishes between (mathematical) "space" and (real) extension, and Professor Spaulding's true task was to attack the validity of this distinction. But has he done it? Let us grant he has shown the identity of the mathematical and the

existential spatial continua, though Bergson would not grant this. Even then the task lies before him of proving that continuous extension can be analyzed into continuity plus a somewhat,—which is either extension, or else something other than extension. But in the former case, the validity of Bergson's distinction between mathematical space and extension is not impugned but justified. So, if Professor Spaulding is to give us an adequate analysis of space, it therefore remains that he tell us what that is, which is not extension, but which, added to mathematical continuity, will give us continuous extension.<sup>3</sup> Then and then only can he claim to have analyzed space,—by giving us the inverse synthesis.

The same considerations as to the relation of mathematics to experience apply, in double measure, to time and the other topics of Professor Spaulding's paper. In short, as I said before, the article left me with many doubts and queries: has he refuted Bergson; has he given us analysis, or is it synthesis; has he given us an exhaustive account, not merely of the mathematical properties of mathematical space, but of real space as well?

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Instinct and Experience.* C. LLOYD MORGAN. New York: The Macmillan Company. 1912. Pp. 298.

Readers of *The British Journal of Psychology* will recall the articles on Instinct by Lloyd Morgan, Stout, Myers, McDougall, and Wildon Carr which appeared in that magazine,<sup>1</sup> and will remember that the papers were written for a joint symposium on the subject which was held by the Aristotelian Society, the British Psychological Association, and the *Mind* Association, in the summer of 1910. Professor Morgan, in the present book, taking as a kind of text his own views and those of some of the others who shared in the discussion, elaborates a statement of what we may call his philosophy of science. The earlier chapters, on "Instinctive Behavior and Experience," "The Relation of Instinct to Experience," "Reflex Action and Instinct," and "Hereditary Dispositions and Innate Tendencies," serve as a fuller expression of the author's views on the immediate subject of the symposium. Instinct is defined as "that which is on its first occurrence independent of prior experience; which tends to the well-being and preservation of the race, which is similarly performed by all

\*Let it be borne in mind that I am here inquiring about the relation of mathematical to empirical space, and not of metrical to ordinal geometry, except as the latter relationship exactly represents the former, which itself is part of the question at issue.

<sup>1</sup> Vol. III.



the members of the same more or less restricted group of animals, and which may be subject to subsequent modification under the guidance of experience." He maintains that the performance of instinctive actions depends wholly on subcortical connections, but that during their performance the cortex receives afferent impulses from the external situation, from the movements of the animal, and from its visceral disturbances. It is by virtue of this effect on the cortex that instinct is later modifiable and that instinctive action differs from reflex action. On the other hand, instincts, as based on subcortical connections, are to be distinguished from innate mental tendencies, such as Mozart's gift for music, which rest on congenital cortical dispositions. The effect of experience on the instinctive response to a situation is to give the situation meaning, and meaning, Professor Morgan distinguishes as either primary or secondary. Primary meaning is furnished by what the author calls primary retention, which is virtually what Fechner called the memory after-image, and what Poppelreuter, under the term "*Secundärerlebnis*" has recently been making the foundation of the higher mental processes. In the sequence of events  $a\ b\ c\ d$ ,  $a\ b\ c$  is still lingering in consciousness when  $d$  appears, and by thus lingering it constitutes the primary meaning of  $d$ . Secondary meaning can exist only when the experience is being repeated: in this case, when  $c$  occurs, there is a vague anticipation or preperception of  $d$ , which constitutes the secondary meaning of  $c$ . Action guided by secondary meaning is intelligent. While rejecting McDougall's curious doctrine that instinct is guided by inherited images, Morgan is not unwilling to grant that some very vague preperceptions, based on innate cortical dispositions, may exist at the first performance of an instinctive act. To this the reviewer would assent only in so far as it implies the statement that an inherited expectant attitude may exist in certain situations; if the kinesthetic sensations from this attitude constitute a preperception, then a preperception may occur at the first performance of an instinctive movement. This would hardly be what Professor Morgan means, however, as an inherited attitude would be based on subcortical connections.

In the last four chapters of the book, on "The Ground of Experience," "Natural History and Experience," "The Philosophy of Instinct," and "Finalism and Mechanism: Body and Mind," the author passes to the consideration of more fundamental problems. To Bergson, whose views were, in the original symposium, championed by Wildon Carr, the major part of the critical discussion is given, and in many respects Professor Morgan's treatment of the French philosopher is sympathetic. For instance, he would not deny that there exists in us a power of intuition which is set over against understanding and thought. It is by this power that we apprehend the process of experiencing, whether in ourselves or in others, as distinguished from the objects experienced: "the *ing* rather than the *eds* of experience." But he objects strongly, and in the reviewer's opinion most justly, to that feature of Bergson's method which "founds on the results of analysis a sundering of orders of existence." The processes of change, of experiencing, which for Bergson be-

long to the vital alone, may exist in all reality, inorganic as well as organic. Professor Morgan might have added that since thought can apply its system of concepts to the world of the vital and psychical as well as to the world of "dead matter," while intuition can feel itself into the processes of change in the inorganic physical world as well as into those of life and mind, a far more systematic account of reality is given by regarding the worlds of "description and appreciation," of "objects and will-attitudes," to use the terms of two of our American philosophers, as different interpretations of the entire world order rather than as two world orders. If the Bergsonian philosophy says that system is not what is desired, it furnishes but another example in the history of thought of the attempt of philosophy to deny its own ends.

Professor Morgan, finally, rules out of scientific discussion altogether any question as to the ultimate source or ground of the world order, and rejects as a violation of this limitation the incursion of any entelechy, vital force, or Bergsonian pure memory into the realm of phenomena. The world order is one. Yet he is willing to admit that there may be vital phenomena which physico-chemical laws are inadequate to explain, and psychological phenomena which biological laws are inadequate to explain. But these remainders must not be accounted for by referring them to extra-phenomenal sources; we must simply "seek to correlate phenomena which will not submit to identification."

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*Experimental Psychology and Pedagogy.* R. SCHULZE. English translation by RUDOLPH PINTNER. New York: The Macmillan Company. 1912. Pp. xxiv + 364.

Few texts dealing with the application of psychology surpass this book in the quality of the typography (although the glazed paper is somewhat tiring to the eye), in the number (314) and excellence of the illustrations, and in the clearness of exposition, suggestiveness, and freshness of treatment.

The reading of this compendium will prove refreshing to the professional experimental and educational psychologists—although they will find little material within its pages not already familiar to the specialist—and very informing and stimulating to the student, pedagogue, school administrator, and lay reader. The author's aims are to give an exposition of those mathematical and experimental methods of scientific psychology which are applicable to the solution of experimental problems in education, and to set forth a few typical results already obtained in experiments on sensation, perception, ideas, feeling, volition, attention, consciousness, assimilation, memory, apperception, speech, physical and mental work, and psychical correlation. An ingenious chronoscope of the author's invention, said to be superior to the Hipp, is also illustrated and described.

Schulze shows considerable ingenuity in the suggested educational applications which he makes of various psychological experiments, but he

makes little effort to present an array of educational findings sufficiently impressive to convince the reader of the value from the results already obtained of the method of psychological experimentation in the field of education. Several of the more important topics of modern educational psychology and experimental pedagogy receive no attention, and likewise American psycho-educational investigations which have departed from the orthodox rubrics of experimental psychology receive very scant mention. Uninformed Americans who read the book must not, therefore, conclude that our educationists are making no contributions in this field of scientific research. The author, in common with a few American and British psychologists, is inclined to place rather too much value on the method of correlation as a means of measuring intelligence. So far as concerns clinical diagnosis—and diagnosis fundamentally is clinical—the method of correlation has thus far proved of no service. None of the existing intelligence scales is in any way based upon correlation coefficients.

The work of the translator has been well done. The reviewer believes that the customary word "exposure" is preferable to the word "exposition" as a term by which to indicate the presentation of a stimulus to the observer.

J. E. WALLACE WALLIN.

UNIVERSITY OF PITTSBURGH.

*Hegel-Archiv*, herausgegeben von GEORG LASSON. Band I., Heft I., Hegel's Entwürfe zur Enzyklopädie und Propädeutik, herausgegeben von Dr. J. LÖWENBERG. Leipzig: Felix Meiner. 1912. Pp. xxiv + 59.

This new enterprise in support of the study of Hegel takes its rise in the conviction that there is a renewal of interest to-day in the teaching of that great thinker. It does not aim, however, at a reestablishment of his system as such. The problem, rather, is that his philosophy should be more adequately understood in the light of its history and affiliations, in order that his significance for the constructive thinking of our own day should become more apparent. The *Archiv* will therefore assemble articles which might otherwise be scattered and in a sense lost in the other journals, together with unpublished materials like Hegel's own provisional sketches and outlines, bibliographical material, biographical studies, and articles expounding the meaning of Hegel and of the German idealism. Dr. Lasson, the editor, is already well known to the philosophical world by reason of his highly able books about Hegel, and promises, in connection with Dr. Otto Weiss, a new edition of Hegel's complete works.

The first number presents a series of Hegel manuscripts, hitherto unpublished, the property of Harvard Library. These have been edited with great care by Dr. Löwenberg, of Harvard University, the whole being introduced by a very illuminating discussion of the master's earlier essays in philosophical thinking. It is of interest to have attention called to the emphasis placed by Hegel in his earlier years upon the very elements for the alleged slighting of which his matured system is nowadays accused of—excessive intellectualism. To the young Hegel, as to the



mature Eucken, the category of life is the highest, and love is its active principle. The editor finds no real hiatus, moreover, between these earlier writings and the later system.

The manuscripts consist of an outline to the Encyclopedia, a bare skeleton of about eight pages, marginal notes upon which then take six pages more; an outline of the Propædæutic, presenting in thirty pages the gist of the logic; and fifteen pages of miscellaneous fragments and notes. They challenge the same type of interest as would attach to an artist's skeleton outline. They tend to show in primitive nakedness the things that Hegel regarded at that time as most essential.

The entire *Archiv*, then, is based upon a quite different plan from the *Kantstudien*. One may judge that under wise editorship it should in time constitute a very serviceable aid to the study of Hegel in particular, and of the German idealism which has felt his influence.

E. L. HINMAN.

UNIVERSITY OF NEBRASKA.

## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. March, 1913. *Qu'est-ce que la vérité?* (1er. art.) (pp. 225-250): F. PAULHAN. — A criticism of various theories of truth, favoring a conception of truth as an abstract identity of phenomena. *Le concept sociologique du progrès* (pp. 251-261): E. DE ROBERTY. — "Movement (or simple spatial change), evolution (or movement vitally qualified), and progress (or evolution socially qualified)" are the three successive spheres that constitute the universe. *Les défenses psychiques* (pp. 262-273): I. IOTYKO. — A second article on the defensive action of fatigue. *Recherches sur le mécanisme de l'imagination créatrice* (pp. 273-288): N. KOSTYLEFF. — A first article applying the type of analysis that has been made prominent by Freud to the problem of inspiration in the novel. *Notes et discussions. Un paradoxe psychologique*: L. DUGAS. *Analyses et comptes rendus. Brunschwig, Les étapes de la philosophie mathématique*: A. DARBON. T. Lipps, *Psychologische Untersuchungen, Bd. II.*: HUPERT. W. Harburger, *Grundriss des musikalischen formvermögens*: L. ARRÉAT. Dr. T. Elsenhans, *Lehrbuch der Psychologie*: G. L. DUPRAT. C. Bouglé, *La sociologie de Proudhon*: J. DELVAILLE. E. Meyer, *Histoire de l'antiquité*: A. JOUSSAIN. *Notices bibliographiques. Revue des périodiques.*

REVUE PHILOSOPHIQUE. April, 1913. *Une théorie nouvelle de la religion* (pp. 329-379): G. BELOT. — A critical study of É. Durkheim's *Les formes élémentaires de la vie religieuse*. *Qu'est-ce que la vérité?* (pp. 380-399): FR. PAULHAN. — A second and final article, showing that the question "what is truth" admits of no simple answer because many cases and sorts of truths have to be distinguished. *Revue générale. Le mouvement Bergsonien*: L. DAURIAC. *Analyses et comptes rendus. Année psychologique, t. XVIII.*: R. MEUNIER. L. Limentani, *I presup-*

*positi formali della indagine etica*: F. PAULHAN. A. de Gomer, *L'obligation morale raisonnée, ses conditions*: P. BERROD. A. Cartault, *Les sentiments généreux*: F. PAULHAN. G. Binnet-Maury, *L'unité morale des religions*: L. A. J. Seth, *English philosophers and Schools of Philosophy*: A. PENJON. *Revue des périodiques*.

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Simmel, Georg. Goethe. Leipzig: Kleinhardt und Biermann. 1913. Pp. viii + 264.

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## NOTES AND NEWS

Among other bequests, the late Miss Henriette Hertz, who died in Rome on April 9, has, according to the London Times left to the British Academy, £2,000 for an annual lecture or investigation or paper on a philosophical problem, or some problem in the philosophy of western or eastern civilization in ancient and modern times, and £1,000, the income of which is to be used to promote the publication of some philosophical work to reward some meritorious publication in the department of philosophy.

THE next meeting of the Conference on the Relation of Law to Social Ends will take place at the University of Chicago, November 28 and 29. The subject of discussion will be, "The Province of Rule and Discretion in the Administration of Justice." All those interested are invited to communicate with the Secretary, Professor Morris R. Cohen, College of the City of New York, New York City.

GARDNER C. BASSET, Ph.D., of the Johns Hopkins University, in psychology (1913), has been appointed research assistant in the Eugenics Record Office of the Station for Experimental Evolution at Cold Spring

Harbor, and will continue the work on the intelligence of inbred white rats begun at Johns Hopkins.

DURING the spring quarter at the University of Chicago, Dr. William Salter delivered eleven lectures on "Nietzsche's Views of Morality and Christianity," completing a course on Schopenhauer and Nietzsche begun two years ago. The lectures will be published later.

PROFESSOR JOHN LAIRD, professor of logic in the Dalhousie University of Halifax, Nova Scotia, has been appointed to the chair of logic and metaphysics in the Queen's University, Belfast, in succession to the late Professor Park.

PROFESSOR JOHN M. MECKLIN has resigned the professorship of mental and moral philosophy at Lafayette College because his teaching was regarded as not in accord with the standards of the Presbyterian Church.

THE mathematical works of the late Henri Poincaré are to be published by the firm of Gauthier-Villars, under the auspices of the minister of public instruction and the Paris Academy of Sciences.

DR. EDWARD O. SISSON, professor of education in Reed College and previously head of the department of education in the University of Washington, has been appointed commissioner of education for the state of Idaho.

WELLESLEY PERRY CODDINGTON, since 1891 professor of philosophy at Syracuse University, died recently at Hamburg, Germany. He was born at Ossining, New York, in 1840, and was graduated from Wesleyan University in 1860.

The degree of doctor of laws was conferred on Dr. John Dewey, professor of philosophy at Columbia University, by the University of Michigan at its last commencement.

DR. TH. WAGNER, who for many years has been associated with the editorial staff of the *Zeitschrift für Psychologie*, died suddenly on July 6 of heart failure.

MR. ALBERT G. A. BALZ, Fellow in Philosophy at Columbia University 1912-13, has been appointed assistant professor of philosophy at the University of Virginia.

JOHN L. ULRICH, Ph.D. (Johns Hopkins University, '13), has been appointed instructor in physiological psychology in the Catholic University of America.

MR. E. E. FARIS, of the University of Chicago, has been appointed assistant professor of philosophy at the University of Iowa.

DR. EDWARD LEROY SCHWAB, of the University of Iowa, has been appointed professor of philosophy at Northwestern University.

PROFESSOR LYMAN P. POWELL, head of the ethics department at New York University, has accepted the presidency of Hobart College.

With the close of its sixth volume the *Zeitschrift für Religions-psychologie* has been temporarily suspended.

DR. J. F. CRAWFORD, of the University of Chicago, has been appointed professor of philosophy in Beloit College.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### A NEW EXPERIMENT IN THE PSYCHOLOGY OF PERCEPTION

THE commonly used illustrations of the process of perception refer for the most part to such topics as space, time, illusions, and reading. In many of these cases the student feels that although some genuine process must have been involved in the interpretation of directly apprehended stimuli, the actual steps in that process are not clearly made out and the description of the course of development of the process is more speculative than demonstrable. And in cases in which the genesis and the mechanism of the process are made sufficiently explicit and concrete, the credit for the performance is usually due to the instructor rather than to the student himself. Since such conditions do not sufficiently encourage and develop the "psychological attitude," which is perhaps the most desirable result of experimental practise, the writer has attempted to devise an experiment which might be more successful in this respect than most of the "classical" demonstrations of the manuals.

Such an experiment should fulfil the following requirements:

1. The situation presented should be both typical and simple, and should be as free as possible from any suggestion of artificiality and "laboratory color."
2. The process involved should, on adequate analysis, exhibit in a definite way the genesis, steps, and processes involved in a typical act of perception.
3. The separate features and conditions of the situation should lend themselves to experimental control without difficulty.
4. The processes or laws exhibited should admit of abundant verification in daily life.

These conditions are admirably met by the study of what the writer calls "The Law of the Resting Point," a principle involved in the perception of suggested activity, and, curiously enough, a principle which seems never to have become sufficiently explicit in the hands of artists, illustrators, and designers. I give below a complete copy of the outline of the experiment as used in the Barnard College

laboratory, and, after the outline, a brief statement of the principles involved. A set of photographs similar to that used in Part II. of the experiment can easily be secured or prepared. This is all the material required for the present form of the experiment. Several modifications may be made without difficulty, for example, the perception of motion on the part of inanimate objects, such as vehicles, machinery, etc., yields a principle which is coordinate with the "Law of the Resting Point."

#### LABORATORY OUTLINE, No. . . .

##### *Perception*

By perception we mean in psychology the interpretation of stimuli which come to us through one or more of the special organs of sense. Sometimes the word is used to indicate the *process* of interpretation, sometimes to designate the *result* of this process. In ordinary speech the result of a process of perception is termed an object, thing, person, situation, attribute, etc., and is often indicated by a concrete or abstract noun. The process by which the interpretation takes place has in most cases been so gradually perfected or so often repeated that its various steps have come to be overlooked in favor of the final outcome, and consequently it is difficult if not quite impossible to give an introspective description of the process. Indirect examination and experimental variation of the conditions must then be relied on if the *process* itself is to be brought clearly into consciousness. By such means information concerning what takes place in perception has been secured, and is often expressed in such statements as the following:

1. Perception always involves centrally aroused sensations (images) and memories, as well as immediate sensations.
2. The results of previous experiences cooperate in giving the object the character which it possesses.
3. The object that is seen is the one that best serves to explain the previous experiences along with the present ones.
4. Perception is due to the interpretation of a present situation in terms of organized earlier experiences.
5. Which one of several objects or interpretations shall be suggested depends upon the laws of association.

Many experiments might be devised to bring to light the various steps of this process of interpretation. The following experiment on "the perception of activity" may be taken as typical.

##### *The Perception of Activity*

An intrinsically interesting perception is that of a person, animal, machine, etc., in action, in the process of *doing* something. Much of the success of show-window demonstrations, street vending, etc., depends on this intrinsic interest. The *New York Herald* has no better advertisement than the sight of its presses through the windows on Broadway. A barber strapping his razor, a mason using his trowel, a lather slapping in the nails, a gang of men unloading a piano, small boys pestering a peddler—anywhere, even in politics and the White House, an individual in action attracts attention.

Similarly, pictures, sketches, photographs, or other representations of things in action are strongly attractive. But many attempts to portray or represent activity are flatly unsuccessful. The average newspaper photographer is the

personification of such failure. The attitude presented is very likely to suggest inaction or pose rather than motion and lively activity. In the present experiment such a complex scene is to constitute the "stimulus." The problem, then, is to discover what factors contribute toward the perception of action or suggested activity. There are two parts to the experiment.

### PART I. *General Observation and Introspection*

Let your laboratory partner sit with closed eyes. Tell him that you are going to read to him a series of phrases or expressions, and request him to give you, after each expression, an accurate oral description of the visual picture which is called up in his imagination when he tries to represent, in his mind's eye, the meaning of the expression. Note down the chief points in his descriptions, paying particular attention to the position of the object in each scene. The following expressions are only suggestive. Think up several new ones and include them.

1. An athlete hurdling a fence.
2. A woodman felling a tree.
3. A pugilist striking a blow.
4. A brakeman leaping to catch a train.
5. A pole-vaulter in action.
6. An archer shooting at a target.
7. A rattlesnake in the act of striking.
8. A man pumping water.
9. A blacksmith shoeing a horse.
10. A broncho trying to unseat its rider.

Now examine the descriptions. Do you make out any common feature in the attitudes or positions of these various actors?

If so, how might this common feature be generalized so as to be expressed in the form of a law?

What evidence is there that this feature is a necessary factor in all representations which are intended to suggest the perception of activity?

If this part of the experiment has enabled you to discern the principle which you are seeking, the second part may be performed by way of further verification and definition. If your search has so far proven fruitless, try again, in the second part of the experiment.

### PART II. *Controlled Variation of the Conditions*

You will now be provided with a series of pictures<sup>1</sup> of the same person in various stages of the performance of some action. All the pictures are intended to suggest strenuous activity. Are they all equally successful?

If not, arrange them in an "order of merit" with respect to the degree to which they suggest activity, placing at the top of the series the picture which is most successful, or which suggests the greatest degree of activity. At the bottom of the series place the least successful picture, and arrange the others in their proper order between these two extremes.

The pictures are numbered or lettered on the back. Indicate in your record the position in the series assigned to each picture in your own experiment. Call the best picture No. 1, the next No. 2, etc.

Secure the records of 10 other students and calculate the average position and the variability from this average in the case of each of the pictures.

<sup>1</sup> A special series of photographs, used in the Barnard laboratory, shows an athlete in various stages of the act of "putting the shot." The series was prepared by Miss Anna C. Hallock, Barnard, 1912.



You have now secured an average position for each picture. Arrange the series in a final order of merit as determined by these average positions. Observe the variability of each of the pictures from its own average position. On which of the pictures do the 10 judges agree most closely? On which do they disagree most? What is the probable significance of these facts?

Do you observe any features in which the successful pictures, say the best two or three, differ from the unsuccessful ones?

Can you make out any general law or principle which is more and more faithfully observed or approximated as one passes from the inferior through the mediocre to the superior pictures?

If not, write out a verbal description of the typical posture portrayed in the pictures at the top of the list. Do the same for those at the bottom of the list. In what does the most striking difference between these two descriptions consist?

Is this the same feature made out in the preceding section of this experiment on perception?

How may the principle or law be best expressed? Is there anything paradoxical or unexpected in this statement?

Discuss the psychological processes which underlie this law. Can you think of any known facts of psychology or of common experience which might constitute a basis for this law?

What various psychological processes are exemplified in the perception of suggested activity? Show in detail how this experiment illustrates the typical processes of perception, as they are stated in the introduction to this experiment.

#### SIGNIFICANCE OF THE EXPERIMENT

If the experiment is successful the result will be a principle which may seem more or less curious and paradoxical to the student,—the “Law of the Resting Point.” This law may be stated quite simply in some such way as the following: *To suggest activity pictorially the moving object must always be caught at an actual point of rest; to suggest pose or arrest it must be caught at a point of actual motion.*

The amateur usually makes the mistake of supposing that to suggest motion, let us say the motion of a horse trotting, the foot of the animal should be represented in the middle of its course. Nothing is further from the truth. To suggest action effectively the foot must be caught at one of the two resting-points—either at the initial point, before the beginning of the movement, or at the final point, midway between extension and return. To show it in the middle of its course suggests only pose, and stilted pose at that.

Similarly, walking is best represented, not by a man with one foot in the air, but by one with both feet on the ground, the one having just completed its swing, the other just about to begin. A man striking a blow with his fist should be represented with the arm drawn back ready to strike or with the arm extended, the blow having been already launched, but never with it in a half way position. It was thought that the introduction of moving pictures and cinematograph photography would be of great service to the painter and sculptor in catching their living subjects in the process of quick action and in

thus enabling the preservation of these attitudes for reproduction with brush and chisel. But the expectation was all a false hope. No attitude represented action so vigorously as the resting-points with which we were already familiar.

The only apparent exception to this rule is not a genuine one. It is to be found in some of the pictures called up in imagination when one listens to verbal descriptions of actions. Thus in the representations of "an athlete hurdling a fence," the actor may sometimes be thought of as in the middle of the leap. But this point will be seen to be the moment of suspension at the height of the leap, when the athlete is poised just above the fence. It is neither the initial nor the final point of rest, but a resting-point nevertheless.

The explanation is simple. The perception of activity is a typical illustration of the process of interpreting a situation in the light of earlier experiences, associations, and memories. The eye can not see while it is itself in motion. Vision is achieved at points of rest, at least the clearest vision is. Because of difficulties of accommodation, adjustment, etc., our clear visions of moving objects come at the moments in which the objects are temporarily at rest. Only when objects are inactive or in attitudes of pose do we ordinarily get clear visual impressions of them in the middle of a conceivable course of movement. Our interpretation of pictorial representations of objects proceeds in terms of these past experiences.

The situation can easily be developed so as to illustrate all of the processes of genesis, change, mechanization, etc., to be found in perception. The situation is simple and free from artificiality, and the possibilities of experimental control as illustrated in the second part of the experiment should enable the student to evolve the principle without the aid of text-books or coaching by the instructor. The experiment is all the better because of the fact that it is not discussed in the manuals. Furthermore, the processes or laws exhibited admit of abundant verification in daily life.

At the option of the instructor the experiment may be extended to cover cases in which movement is to be represented, although there are no resting-points to be caught. There are perhaps two chief types of cases in which such representation might be desirable,—the case of a swiftly moving vehicle (as an automobile) and the case of vibrating pieces of machinery (as the fly-wheel of an engine). Here we are dealing with inanimate objects whose motion is impressed upon them, and furthermore this motion is of a uniform sort, may be in a continuous direction, or may be within a very small space.

But the laws of earlier experience and of association, which were used to explain the principle of the resting-point, must also come to our assistance here if we are to understand the process of perception.

All that can be done pictorially is to portray the retinal picture which the eye gets when looking at such a moving object,—blurred spokes in the wheels, streaming ribbons and banners, blurred visions of oscillating levers, or what not. The law is: Always put there just what the eye could really see, and no more. Too much interpretation and assistance on the part of the artist defeats its own purpose.

The experiment is described here in the belief that others will find it useful.

H. L. HOLLINGWORTH.

COLUMBIA UNIVERSITY.

## DISCUSSION

### THE SUPPOSED CONTRADICTION IN THE DIVERSITY OF SECONDARY QUALITIES—A REPLY

PROFESSOR LOVEJOY'S reply to my note<sup>1</sup> so far misses the point I have tried to make, that it seems worth while to repeat the original argument: (1) "Is there a science which actually treats secondary qualities as subjective?" I mean, is there a science which in the course of its regular work finds it necessary to use the category of consciousness to explain the variation of secondary qualities? To me the answer appears decidedly negative in all the senses of the question which Professor Lovejoy distinguishes. Can any one point to a single reputable text book in optics in which the reason why the same object appears square from one point of view and oblong from another, is explained by the action of consciousness? Obviously not, for physics explains such variations by the mathematical properties of light rays. If some physicists, impregnated with current philosophic theories, do assign the things with which they are not concerned as physicists to the realm of consciousness, that is *obiter dictum*, in no way determining their laboratory procedure or mathematical computation. Professor Lovejoy admits that "whenever what is supposed to be one object is perceived differently by different percipients, science customarily assumes some *objective* difference (of primary qualities) between the two cases." "But," he goes on to say, "this difference is not, by any science which keeps its wits about it, supposed to be completely identical with the difference between the two sensations; it is merely treated as the external occasion and counterpart of the latter difference" (p. 215). Now the last clause represents a philosophic theory which may or may not be justified, but it is surely not a prerequisite for scientific investigation. Some of us have serious doubts about the existence of sensations "in a

<sup>1</sup> This JOURNAL, Vol. X., pages 27 and 214.



realm of merely subjective appearances." I do not believe I have ever had a sensation of red distinguishable from the redness of an object, but surely such doubts, however fatal to my philosophic orthodoxy, can not disqualify me from the study of optics and acoustics.

The distinction between primary and secondary qualities is, as Duhem has shown, in no wise necessary for scientific physics.

(2) We come now to the main question. Is there any contradiction in "describing the same object as 'really' possessing simultaneously all the incongruous qualities which at any given moment appear in the perception of different percipients?" I see no difficulty whatsoever in the same object possessing all sorts of contradictory qualities, provided no two contradictory qualities appear in one point of view or relation. Professor Lovejoy admits, for instance, that the same line may simultaneously subtend an angle of  $23^\circ$  from one point of view and  $45^\circ$  from another. Why may not an object be square from one point of view and oblong from another? Why is there no contradiction in the first if there is one in the second? I am told that this question is "a rather curious disregard of the familiar distinction between the relations and the qualities of a thing" (p. 216). Now I am quite willing to confess that I do not pay the usual homage to this familiar distinction, and I hope on some other occasion to pay my respects to its deceptive and treacherous nature. But even if we accept the usual distinction between qualities and relations, I see no reason whatsoever why the angle which a line subtends should be called a relation, and the angle which it makes with another line (its squareness or obliqueness) be called a property. Even if there were some reason why the latter alone should be called a quality, and not the former, it would not save the situation for Professor Lovejoy's argument. I have a parallelopiped before me. If I stand it on its rhomboid base it is a right parallelopiped, but if I stand it on one of its rectangular bases, it is oblique. The distinction between rightness and obliqueness here is identical with that between the quality of the square and of the oblong. Must I drag in consciousness to explain why the same parallelopiped has the quality of obliqueness in one position and of rightness in another? It would indeed be sad for the science and the students of geometry if that were necessary.

The difficulty which Professor Lovejoy and others find in conceiving one object possessing contradictory qualities, seems to me to be due to a ghost of the thing-in-itself. "Every real thing," we are told, "has, besides its relations, a 'nature' or character or set of qualities of its own" (p. 216). Now, whatever may be said for the existence of *dinge-an-sich*, it seems certain that science does not deal with them, and that none of its objects possesses qualities in

isolation but only in given systems.<sup>2</sup> If things could not have contradictory qualities, neither could they have contradictory relations or attributes, and all predication would be impossible. I regard Plato as having cleared this up in his controversy with the Megarians.

As a layman in psychology I have to take for granted what its history tells me, *viz.*, that the faculty of memory is no longer used as an explanation of the fact that some things are forgotten rather than remembered. Just so it seems to me we shall have to give up consciousness as an explanation of the fact that the same object appears different from different points of view, and that some propositions are true while others are false.

MORRIS R. COHEN

COLLEGE OF THE CITY OF NEW YORK.

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## SOCIETIES

### CONFERENCE ON THE RELATION OF LAW TO SOCIAL ENDS

A UNIQUE and important conference was held on April 25 and 26 in New York City, Professor Dewey presiding. It was a meeting of jurists, philosophers, and sociologists, for a survey of matters of mutual concern. It was actuated by a belief expressed by Professor M. R. Cohen in the Philosophical Association last December, that "jurisprudence is a philosophical discipline," and that philosophy and law alike have much to gain by recognizing that fact. Or, to amplify the belief in the sense in which it was entertained by most members of the conference: jurisprudence is a sociological discipline, and sociology is, or ought to be, philosophical. The achievement of the conference was directly due to the efforts of Professor Cohen; the response to these efforts was a remarkable witness to their timeliness. Political movements are rapidly putting forward their philosophical aspects; there is a widespread conviction that the time is ready for a review of our fundamental political ideas in the light of whatever social, ethical, psychological, and even metaphysical, wisdom we can muster; and that a certain menace of alienation between the law, especially as interpreted by our courts, and the more popular currents of public life can be met only by a better understanding of the principles upon which the administration of justice depends. The conference is a symptom, also, that the awakened interest in political and legal philosophy evident in France and

<sup>2</sup> Failure to perceive this is also at the basis of the confusion in the theory of innate or "natural" rights.

Germany in the work of such men as Tarde, Durkheim, Stammer, Kohler, is being felt here, together with the implied confidence in the worth of such reflection—perhaps of its necessity.

No time was lost in this conference in drumming upon the truism that law ought to have some relation to social ends, or that ultimately the ends of law and of society are the same. The problem was to determine what the social end, or welfare, is (as in the paper of Dr. Adler); how changes in ideals of welfare bring about changes in conceptions of justice (Professors Patten, Goldenweiser, and Lewis); and how, in view of these changes, law should be adjusted to them (Professors Kirchwey and Cohen). It is significant that so large a part of the discussion centered upon the work of the courts, and the competence of the courts to make or modify law by considering, behind the existing law, its sources—whether in ideas of justice or in social conditions. The papers of Professors Kirchwey and Cohen called for an overt recognition of lawmaking functions in the courts; while that of Professor Tufts suggested a social widening of the logic of judicial decisions and opinions. Professor Henderson, in a striking and original study of procedure, proposed a radical modification of our courts as instruments for discovering truth and for making justice effective. Dr. Marshall outlined an equally radical revision in our notions of legal guilt.

The notable paper of Professor Pound, which opened the conference, gave it its historical setting, and expressed its dominant spirit. That of Dean Lewis contained valuable proposals for working into the consciousness of the rising generation of law-students the bearing of social fact upon law.

Since the interest in the conference was largely determined by the breaches opening between a conservative law and a progressive social order, it was natural that little attention was given to the stable elements in law and in its sources. A critic of the conference might have urged this as a defect, and one which limited to some extent the constructive force of its proposals. The real problem of judicial legislation, for example, can hardly be stated as an alternative between finding law and making it; the problem exists because finding law is making it, and the difficulty is to distinguish between the creative development of law which is involved in applying old and permanent principles to new cases and the technical legislation of our representative bodies. Until the problem is so stated, the observer may feel that proposals to recognize in the courts a law-making power coordinate with legislation have reckoned too little with the difficulties of admitting multiple sources of authoritative law. The same failure to appreciate the permanent elements in law might have been observed in occasional references to the philosophy



of "natural rights" as obsolete—a point of view not peculiar to this conference. It may not be amiss to suggest a doubt whether any philosophy is, or ever becomes, obsolete. Certainly we do not live in the seventeenth century nor yet in the eighteenth; but if these centuries and their works were dropped out of history, our present intellectual assets would be conspicuously diminished; and not least by the conception of a right which is in some sense natural instead of conventional, and permanent instead of passing, though quite capable of evolution. But the critic need not dwell upon a point which in so significant and fruitful a conference, was but a natural error of emphasis.

The conference was made permanent, a second meeting being appointed for the coming November, with the topic "Administrative Justice." This topic involves the proposals which have been made of administering justice through commissions clothed with large discretionary power. It raises the issue of rule *versus* discretion in law, corresponding to that between general principle and specific instance in ethics; philosophically it furnishes an important illustration of the relation between universal and particular.

In the outlines which follow of the several papers read, I have had the aid of a number of abstracts; others have been drawn from memory: and the whole must be understood to be no official report, but rather a series of personal impressions, for which the writers of the several papers are not responsible.

*The Philosophy of Law in America:* ROSCOE POUND.

A review of the historical development of legal philosophy in America, or rather of the various philosophical influences which have entered into our jurisprudence and have tended to produce a philosophy of law among us. The paper was too rich in detail to admit of résumé. The nineteenth century was described as the century of separation between law and philosophy; only in Scotland and in Italy was there uninterrupted pursuit of the philosophy of law. There were good reasons for the distrust of philosophical jurisprudence. On the one hand it had tended to produce ideal theories, out of relation to the historical conditions of positive law. On the other hand, if it perceived this defect and attempted to deal philosophically with actual law, it showed little power to guide to improvement. It inclined to identify what ought to be with what is (an attitude which in Hegel becomes a principle), and so amounted to little more than an ingenious justification of things as they stood. Curiously enough, the same remoteness and lack of effective force characterized the work of the historical school, typified by Savigny. Unwittingly these thinkers read their history in the light of prevalent

philosophical conceptions; it was inevitable that their results should correspond essentially with those reached by the theories of reason and the "nature of man."

But in renouncing the connection with philosophy, the usual results of specialization have appeared. Every specialist is inclined to take his own part for the whole, losing sight of his actual need of the branches from which he has distinguished his own work. Thus, in the law, for a conscious philosophy has been substituted an unconscious philosophy, even more dogmatic and stubborn. Through the medium of Blackstone, the ideas of Grotius were perpetuated in our jurisprudence, which became a compound of an *a priori* theory of natural rights with a contract theory of political rights, a legislative theory of the source of law, and a doctrine of the sovereignty of the people. Back of all our judicial practise, the effective philosophy has been a form of individualism, exemplified in the work and personality of Justice Field—a sort of frontier individualism, whose influence was at its height about 1890. Since that time an increasing socialization has been perceptible in judicial decisions. The change of basis may be seen, for example, in such issues as that between rule and discretion in the administration of justice, between personal interests and corporate interests, between the finding and the making of law by the courts, in the doctrine of legal causes, in the general theory of interests, and in the theory of punishment. The present time is marked more by the need than by the existence of a vigorous philosophy of law; but the impetus to its development is at hand, and a promising basis is possible in sociology.

*The Ethnological Approach to Law:* A. A. GOLDENWEISER.

No writer on the theory of law is inclined at present to ignore the history of laws and customs; but few of them have made adequate use of their ethnological material. Westermarck, Hobhouse, and Sutherland, as well as Post, Steinmetz, and Kohler have been lacking in this respect; and chiefly through failing to give proper weight to the *ideas* of a people as relatively fixed points about which institutions are formed. The various customs in any "cultural complex" have definite psychological relationships, whose investigation is characteristic of the newer ethnology. The practise of confession among the Eskimos, and their legal procedure when taboos are broken, are controlled by the belief that sin is a material object visible to the sea-animals that furnish the tribal food. A peculiar form of marriage by purchase among the Kwakiutl is to be understood together with the equally peculiar custom of "potlatch"; both depend upon a crude idea of loan at high usury. The psychological nexus underlying legal arrangements, shown by these and other examples, must

be borne in mind by the student of law; a "programme of research" emerges, of which the following problems furnish a rough sketch:

- (1) How does custom become standardized? By what agencies, and through what types of social pressure?
- (2) What deviations from custom occur? How does society react to these deviations, and particularly to those which imply progress?
- (3) What are the processes and agencies by which law becomes formulated; and by which specific legal institutions and officers emerge?

*Ihering's Theory of Law*: ISAAC HUSIK.

An analysis of the will, admitting both egoistic motives and a motive of ethical self-assertion, leads to a theory of rewards and punishments as playing solely upon the egoistic motive, and to a theory of the state as dealing solely in punishments, or coercion, while reward is concerned in the organization of commerce. The state is the social organization of coercion; and law is the system of principles regulating the use of this public force. Yet, while in its form law is but the political mechanism for enforcing norms recognized by the state as binding, in its purpose it envisages every condition of social life which can be secured through external compulsion.

*The Relation of Legal to Political Theory*: W. W. WILLOUGHBY.

A political institution has necessarily a legal outline; hence an analysis of the state is at the same time an analysis of laws. But the purposes of the state are wider than the purposes of law. For while law aims to discover and express the general principles of right, politics must develop a scheme for putting these principles into effect.

*Responsibility*: H. RUTGERS MARSHALL.

Time was wanting for the reading of Mr. Marshall's paper: but the sketch which he was able to give of its contents provoked lively discussion. He proposed to displace the ambiguous conception of responsibility by the straightforward and simple conception of accountability. Inquiries into responsibility lead the law into hopeless puzzles of psychology and ethics, and into equally hopeless questions of psychological fact. Most of these problems are irrelevant to the proper function of the law, which is concerned primarily with the question of objective causality: What was done and who did it? Law must follow the lines of social causality, not those of moral responsibility.



*The Criteria of Social Ends: J. H. TUFTS.*

It is a common assumption, and in most of our constitutions a stated principle, that the state, through legislation, may and should further social ends as opposed to individual ends. Hence our courts have often been called on to determine whether a given enactment does or does not subserve a social end: What constitutes a "public purpose"?—especially when the proposed measure clearly serves both public and private ends? May the public authority, state or municipal, lawfully undertake to supply water to citizens, to supply fuel in time of strike, to light streets, to loan money to persons impoverished in some sweeping calamity, to buy and sell land for the sake of improving tenement conditions? The considerations by which our courts have found answers to these and similar questions furnish an interesting commentary on the logic and philosophy of lawmaking.

The Massachusetts Supreme Court has, by decision or opinion, approved, as coming within the category of "public purposes," proposals for municipal water supply, for municipal gas and electric lighting, and for the compulsory lowering of a dam to relieve flooded meadows. It has disapproved, as not properly public, proposals for aid in rebuilding property burned in the Boston fire of 1872, for municipal coal and fuel yards, for improvement of housing conditions by municipal building and purchase of land. In stating the grounds for its conclusions, the court has, for the most part, proposed some criterion of what constitutes a social end, and then by deduction has determined whether the proposal in question could be subsumed under its definition. But the variety of criteria proposed, and the vacillation in their use, suggest that the method itself, the deductive method of procedure, is out of harmony with the real function of law.

If, after the great fire, the city of Boston loans to Foster money to rebuild, the benefit of this and other such loans will doubtless accrue ultimately to the community; but the direct benefit is to Foster: and on the ground that a measure is public only when the "direct object of expenditure" is public, the city of Boston is not allowed to make the loan. But this criterion of direct aim is rejected in another decision of this court, as well as in recent decisions of the U. S. Supreme Court. If the height of a dam affects the welfare of people in several townships, we incline to assume that private interests are becoming public interests by simple quantitative increase: and in accepting this view of the matter, the court is taking as a criterion of a public end the number of people affected,—or their proportionate number. But clearly this criterion would admit the opening of a municipal coal-yard. When Justice Holmes, then

on the Massachusetts bench, declared this latter enterprise unlawful, he based his view on the ground that it interfered with the private right to engage in the coal business, as well as in any other commercial undertaking; thus implying that a public purpose must at least be non-commercial in character. In another case it is held that a public purpose is one affecting persons "as a community and not merely as individuals." But it is not clear that to keep houses from burning down affects the owners as a community, while to aid in rebuilding affects them solely as individuals; nor that the water we drink affects us as a community while the houses we live in affect us merely as individuals. In rejecting the proposal for municipal housing the stress of the opinion is laid upon the argument, again, that buying and selling land and houses is a "natural right," and that the government therefore must not compete. The fact that individuals have also engaged in selling water, gas, and electricity, is not reckoned with. The decisions and opinions mentioned may all be justified; but surely not on the ground of consistent deduction from a stable criterion of social ends.

It is not difficult to recognize that behind the show of logic, *usage* is vigorously at work in determining the views of the courts, and doubtless rightly so. There is some ground for judging that the term "public" is simply "a term of classification to denote the objects for which, according to settled usage, the government is to provide."

But reference to the past clearly has its limitations in determining legal meanings, even when supplemented by definition and deduction. Another guide of judgment is, in fact, employed, which we may call the *teleological or experimental*. In the decisions of the U. S. Supreme Court it is increasingly resorted to. This simply means that public need and the appropriateness of public agency are the sufficient tests of a public end, and that no definite concept is either possible or necessary. Thus the teleological test is held to justify a conception of public purpose in one state which does not necessarily apply in states of different climate or resources. Here, in an interesting way, the deductive logic is reversed. Instead of reaching out for an assumed fixed concept of what is public and measuring the case in question by that concept, "the method is to see whether the end proposed is desirable and can be reached only, or most appropriately, by public agency. If so, this is a strong reason for holding the purpose to be 'public.'"

In one case, the Massachusetts Court has made actual use of this experimental method of reasoning. "There is . . . a necessity of having water, common to the inhabitants of a community, which can not well be met except by the exercise of public right, and,

therefore, the furnishing of water has been regarded a public service." If it had relied upon this in the housing opinion, it might or might not have reached the same result, but it would certainly be upon more tenable ground philosophically than in relying upon natural rights. It would also avoid the embarrassment of using fixed concepts which can not possibly be applied consistently to all its series of cases.

*The Conception of Social Welfare:* FELIX ADLER.

There is no novelty in the proposition that legislation should be directed toward securing social welfare. In all ages and in all codes this end has been avowed or implicitly accepted. But there has been much divergence of view in regard to what constitutes social welfare; and the progress of government consists largely in the revision of our views of what social welfare is. There are tangible elements of welfare conspicuous to all men, and in no danger of being overlooked; but there are also intangible elements of welfare: it is in regard to these that our understanding chiefly varies and develops.

In our own prevalent conception of social welfare, there are four controlling elements: individualism, socialism, evolutionism, and religion. The fact that individualism is still the most conspicuous of these shows that we are still in the tide of reaction against feudalism; for individualism, as an element of our conception of social good, is to be understood only by its contrast with feudalism. The spirit of feudalism is expressed in the notion that one man's life may be fulfilled in the life of another; the wealth, honor, and even moral worth of the vassal, in those of his lord. The religion of feudalism displays this same belief in vicarious fulfilment and worth. Individualism is a protest against this conception, and an affirmation that each man should find his fulfilment in himself. The ideals of liberty, and equality, and the unhindered pursuit of happiness, find their meaning in this revolt. Individualism does not deny the obvious social interdependence of men; but it interprets social relations as means to the ultimate individual good. When individualism uses the language of social welfare, it pictures a condition of abundance in which the share of each is at its height. It is through distribution that social welfare becomes literally welfare. The transitive, or vicarious, relation in the enjoyment of good on which feudalism was built is denied, whether toward the few or toward the many.

Socialism, the second element in our conception, is usually, but wrongly, regarded as the counterpart of individualism. To say "social" is to say nothing: the individual has always been social. The question is, how and for what purpose. Our current socialism



calls for cooperation in production only that there may be greater severalty in consumption. It uses collective ownership and collective action as more effective means to individual ends. Its emotional fraternalism is sustained by the vision of a distributive elysium beyond.

Darwinism affects our conception of social welfare in divergent ways. By setting up the standard of the fit-to-survive, it brings a kind of egoistic calculation into our view of the constitution of society, a tendency to exclude the less fit, and to contract the borders of social membership. On the other hand it calls upon the present to subject itself to the service of a future and higher human type.

The religious instinct has always been strong in America, and we have had a vague consciousness that religion must fuse the various factors of our conception of social good, and give them their final spiritual expression. But so far religion has not developed this expression in definite form. Our individualism has become tinged with socialistic motives; and there is a biblical altruism at work upon the mixture which combats, without neutralizing, the false belief that the individual can realize his being within the circle of his own self. Nor can there be any solution until the rightful vicarious spirit of feudalism returns to its own, purged of its false reverence for the few, leading the individual to realize his life not in individual overlords, but in the organic whole.

*Law and Progress:* G. W. KIRCHWEY.

The popular will hastens to express itself in law, believing that progress should record itself in law; and that law is an apt agent of progress. These beliefs are largely illusory. They are due to the convergence of two prevalent fictions of the nineteenth century: Austin's fiction, that law is the command of a sovereign, popular or other, and the political fiction that this sovereign, in our case the popular sovereign, can only command what is right. The popular will has thus come to regard itself as right, and as deserving to be immediately crystallized into law.

As a matter of fact, progress owes little or nothing to law; why should it hope to gain by embodying itself in law? Unofficial social control may well do more than official control. And of these official agencies, the representative body is a better organ of social reform than the direct popular will, as expressed, for example, in referendum.

The chief difficulties in making law an agent of social reform come from the judicial function. There are several reasons for this. First, the professional attitude of the judges. Not only is the judicial function a specialization within the law, but the very seclusion and independence of the judges deepens their specialization and their insensitivity to public opinion. The law of the bench thus

tends to become a self-enclosed body; verbal inspiration, driven out of theology, takes refuge in the bench, until one is tempted to inquire whether there is any way to change but by revolution.

A second reason why the judiciary is an unfavorable organ of progress is the domination of precedent. A third, the theory of the separation of powers, debarring the courts from exercising legislative functions, and thus fixing upon them the principle of precedent. A fourth, the amount of public opinion requisite to effect a change in law through the courts. In the representative body, change is comparatively light-footed; but the courts feel public opinion only when it has become universal.

The retaining wall for all these difficulties, however, is the fiction that the judge never creates the law, but only finds it, with the implication that the law for all possible cases already in principle exists. Hence, if the bench makes law at all it must be incidentally and unconsciously, rather than by deliberate will. This fiction should be abandoned; and with it would fall the condition of fact, that judges are unfit, or by specialization unfitted, for deliberate legislation.

*The Content of Social Justice:* SIMON N. PATTEN.

Social justice is contrasted with primitive justice; and primitive justice is hardly yet giving way to the newer conception. Ideas of what is right or just (and hence systems of law) vary with ideas of what is valuable, and at the same time under social control. In former times, human nature itself was the subject of concern, and its defects the object of regulation; an external sovereign was the obvious agent for this regulation, and the ends of government were considered attained when full liberty of the person could coexist with the peace and order of society. In the newer view, it is not human nature (which is hard to measure or investigate), but human wants that are the subject-matter of our problems of justice, and these wants are easily measurable. A just order is one which secures prosperity through work, and which provides for progress in terms of income. We test governments by these standards; and they become our effective rulers,—we obey their requirements, not the commands of superiors.

Since we are in a transition stage to the newer conception of justice, the ethical emotions of the time will show the pressure of the new ideals centering about these economic wants. We hate privilege, exploitation, graft, unearned income, servility, and debt,—embodiments of injustice as now perceived. So also, our legal principles show the change of accent. The older jurisprudence grew out of primitive conditions where labor was the chief origin of wealth, and hence the courts view all wealth as the result of individual toil and

sacrifice. Our laws are adjusting themselves with difficulty to the proportional amount of wealth which is created by society rather than by the individual, destructive of the older view that any man's income is self-made. "Every one with an income of fifteen dollars a week gets more from society than he creates. He is a social debtor, and should account for what he gets from society before he can ask society to consider his claims." This is especially true of those who happen to be in possession of local advantages. Such advantages are not individual perquisites; and justice gives the state the right to prevent the exploitation of them to the detriment of the masses of the people. It permits the public to assume control of such resources when the general use requires. Social justice thus gives rise to a doctrine of "equalized advantage"; local advantages are to be taken from their possessors and distributed more widely among the workers of the world. A tariff is one attempt to apply this principle. So also the adjustment of rates for transportation to the seaboard. "A good rule for foreign commerce would be: Give to all sections the same advantage, and to each section some advantage over the outside world. The same rule in internal trade would be: Give to each section an equal advantage in production and transportation, and to each section some protection for its local advantages. Such principles are only partially recognized in the courts and by legislatures, but will in time gain general recognition. The doctrine of a *social mode* deserves a place coordinate with these axioms. In any combination where nature or evolution has had a controlling influence the numerical arrangement of its units is such that the larger number will be at the center, with a reduction in numbers as the extremes are approached. This can be represented in a curve rising at the center and falling off in each direction. This center, called the mode, should grow at the expense of the extremes. The social mode of any group is its organized element; the trade-unions, employers' associations, and industrial groups of all sorts. Their action represents the progressive part of each social unit. The individual has no rights against the mode of his group, unless the group itself is convicted of unsocial acts. Cut-throat competition and sweatshop workmen represent survivals whose elimination is desirable. Society is at present abnormal in that wealth is aggregated at one extreme, and numbers at the other. Two opposing modes are thus created instead of a harmonious growth at the center. . . . Recently, however, evolution has been playing a larger part, and the upbuilding of a true social mode is in progress. The rich are losing in wealth and the poor in numbers. Progress consists in those changes that create advantages for those of moderate income who have the industrial qualities of the rich and the working-power of the poor. This



change is but a redistribution of the social surplus to which all have an equal claim. In the past, the primary end of law was to protect property and liberty. In the future, it is the social mode that merits first consideration."

In bringing these doctrines into effect, the courts should take a leading part. The legislator is under the influence of the emotional demands of the people, which have a negative and revolutionary tendency. Slavery in Europe was abolished, but not by warfare; it was done away with by increasing the restrictions that in the end made it unprofitable. In the same way, injustices of our present order could be removed if the courts could take a liberal view of the law and of the economic facts involved. There is no prescribed division of powers between the legislative, judicial, and executive functions which can be accepted. The natural evolution is for the executive and the judicial to encroach on the legislative. In this way emotional outbursts are prevented, and orderly evolution displaces the crude countermovements of revolution and reaction. The people should pass on what is done; but popular initiative is always bad, because emotionally impelled.

And as between the idealists who ignore existing social mechanisms, and the stand-patters who ignore ideals and existing evils, the principle should be to use the mechanisms that exist rather than attempt to create new ones, but to use them in the interests of ideals, so far as these are founded upon a study of facts.

*Our Litigious System of Legal Procedure:* E. N. HENDERSON.

The administering of justice in our courts is, for the most part, thrown into the form of a contest between two parties, a plaintiff and a defendant, whose issue is determined by a passive jury and judge. This form seems both natural and suitable to the purpose of justice; we are hardly aware that any other form is possible, still less desirable. Does not every question of justice naturally shape itself as a dispute between two opposing parties? And is it not the essence of a court that each of these parties should be heard freely by a disinterested third party, capable at once of a completer survey of the facts, and of a fairer judgment of principles, than either party alone; and reaching a result more nearly right than the simple unreferred conflict of the opponents would be likely to win? Further, in criminal prosecutions, to bring the government into court as but one of the contending parties has been one of the great legal inventions in the interest of personal liberty; the litigious system thus enlists in its favor our rooted fear of governmental oppression.

The substantial present advantages of the litigious system may be stated as follows: (1) The self-interest of the contending parties may

be relied on to bring most relevant facts to light, and to review all their possible bearings. (2) Since each party has presented its own case, it can have no cause to complain that its case has been badly or unfairly presented. (3) Since the court is passive, and without a prior theory to defend, its finding has the highest attainable impartiality. (4) Since the risks and expenses fall presumptively upon the plaintiff, needless litigation is restrained.

But the litigious system is subject to serious defects. Some of the faults of the ancient trial by ordeal or combat are retained in translation. (1) It is not the primary aim of either party to discover truth, or to present the truth as such to the court; each aims to persuade, and to win. Hence, the data upon which the court works are not crude facts, but versions. The temptation is to distort and to suppress; and to appeal to the passions and prejudices of jury and of judge. The contest tends to reduce to a struggle between the talents of the opposing lawyers, in which wealth and influence can not fail to win undue advantages. (2) The restraint of needless litigation is not secured without restraining also much that is needful; hesitation to seek redress of wrong in court may become a public evil. (3) Since the lawyer is trained to the task of the advocate, he tends to concern himself only with the interests of his client, and to lose all sense of responsibility for the miscarriage of justice, as well as for bad laws and for bad methods of legal procedure. The class professionally trained in justice disclaims responsibility for its existence.

In view of these defects, another system, which we may call the inquisitorial system, is beginning to displace it. In the appointment of investigating commissions, appraisers, etc., as in the criminal procedure of France, the court actively undertakes the discovery of truth. This principle is capable of much extension, though litigation must remain as a final resort for individuals dissatisfied with the judgment of inquisitorial courts. It is time to abandon the theory that self-interest is the best motive for bringing either truth or justice to light; or that other motives are unavailable to the law. So far as expert testimony is concerned, the substitution of some impartial agency for biased or purchasable advice is necessary to prevent the whole function of the expert from falling into mockery and disuse. And especially is it important that the legal profession should develop a sense of its obligation to the community and to the ideal of justice, even at the expense of its preoccupation with its duties to clients.

*The Preamble to the Constitution:* G. A. BLACK.

The preamble of the federal constitution presents a remarkable

enumeration of social ends as the object of law, the supreme law of the land. These ends are not fixed nor numerically distinct, but merge into one another in various ways. Thus, to provide for the common defense is not wholly different from securing domestic tranquility; and in the limiting case of national growth they would become identical. A most important transformation takes place in the end referred to as "the blessings of liberty." At present, the fortunes of liberty are chiefly concerned in the line to be drawn between governmental functions and functions reserved to the people. We are uncertain about the border between the police power on one hand, and the rights protected in the fourteenth amendment on the other. The Oklahoma Bank case is singularly interesting in that there and there only in decisions of our highest court, the police power is defined in terms that set recognizable limits to its exercise, as a means to "public welfare." Until such limits are established, the relation of liberty to our law stands in jeopardy.

*The Social Sciences as Basis of Legal Education:* WILLIAM DRAPER LEWIS.

If law drifts away from its normal relation to social conditions, it may be largely because the student of law is not trained to study these conditions, or to recognize the organic relation between good laws and social facts. We train lawyers as if justice stood apart from the current of events; but in truth there is no such thing as abstract justice. We can not say what is just without considering the community's feeling of right. That which expresses the dominant social ideals is just; it is these dominant social ideals which law should express.

Ideals of this kind are subject to change. Formerly in this country the ideal of free contract embodied our conceptions of justice. To-day the ideal of a living wage is tending to supersede freedom of contract and radically to limit it. So, also, income as a test of welfare is one thing; prosperity is quite another thing, and may define a different ideal of justice. It should be part of the training of the lawyer to perceive this relativity and change in the basis of just law, and to adjust the law to these developments.

The judge must bear his part in this adjustment. In considering whether, or how far, law should be made by the judge, we must distinguish between a legal rule and a legal principle. A legal rule is always applicable (as the rules regarding negotiable instruments, time of protest, etc.), and should never be subject to alteration by the bench. A legal principle, however, is never universally applicable (as the principle that promise on consideration is binding, or that property ought not to be taken except by consent or due pro-



cess of law). Hence principles often conflict with one another. And the adjudication of any of these inevitable conflicts requires a knowledge not only of the principles themselves, but of their relative weight—an even more important as well as more difficult matter. There is no measure for this importance except in the social basis of law itself.

The necessary education of the lawyer can not be obtained by adding to the usual legal studies typical college courses in social sciences, economics, etc. Teachers are needed who can point out the special relationships with which the lawyer is concerned; and these teachers do not yet exist, but are being developed by the situation. Joint seminars, in which instruction is given by teachers of social science and of law in collaboration, may serve a useful purpose.

*The Principles of Judicial Legislation:* M. R. COHEN.

Judicial legislation is generally regarded by the legal profession itself as a usurpation of function; it is the business of courts to declare what law is, not to change it or make it. Nevertheless, judicial legislation exists; it has shaped, and continues to modify, not only our common law, but also, in large measure, our statute law and our constitutional law. The theory that for the courts, law is found, not made, accords well enough with the daily experience of bench and bar; partly because the great majority of cases may be put into stable classes; and partly because the theory itself tends to control the practise of the law. Our preconceptions regarding the division of powers, and our prohibition of *ex post facto* law (all judge-made law being *ex post facto* for the case in which it is made), harmonize with the theory and help to exclude any conflicting view. But perhaps the deepest basis for this theory is in the sense that legal rules, being for the most part morally or logically obligatory, must be received from without, not fabricated by human agencies.

But this last-named prejudice belongs to a pre-evolutionary philosophy. We have now no more reason to believe in fixed *a priori* elements of law, to be revealed or codified once for all like so many axioms and thereafter passively received and applied, than to believe in fixed *a priori* elements of language. When we admit, as we must, that law is a social growth, we have no difficulty in justifying the fact that all who are concerned with applying it are also in some measure modifying it and creating it.

In three ways law is being made by the courts: by direct legislation, by interpretation, and by application. (1) If we give up the dogma that life can not produce a situation not covered by some precedent, we must ask what happens when new cases arise, cases of "first impression." Here the court is thrown back on principles,

*viz.*, prevailing ideas of justice, the nature or fitness of things, public policy,—the original sources of all law. Cases of first impression may be rare (though chiefly because they are recognized with reluctance); but out of them have come, by direct judicial legislation, the law of quasi-contract, laws of immunity of witnesses, laws of publicity, the law of fixtures, the distinction between libel and slander, etc. A favorite mode of direct judicial legislation is found in the invention of conditions implied by law, or “conclusive presumption.” Thus in the so-called contract of employment a number of duties are said to be implied which are purely the creation of the judiciary, as, for instance, the rules regarding assumption of risk.

(2) Interpretation is sometimes defined as the discovery of the true meaning of a document or law. But when has a court taken the natural way of finding the true meaning of a law, namely, by enquiring of its framers what their intention was? Interpretation actually proceeds along lines which allow judicial discretion, under cover of presumptions of legislative reasonableness and regard for public welfare. Most problems in interpretation arise, not as is often supposed because of obscurities of language, but because of situations arising under the law which were not foreseen by legislators. And these problems are especially abundant in our own country, where the drawing-up of laws is likely to be hasty and incompetent, and where supplementary legislation by administrative officers is not countenanced. Here equitable interpretation is called upon necessarily and largely, not only to supplement the abstract generalities of all law, but to extend and restrict the meanings of statutes so as to make them workable.

(3) Application. Even when law is definite, questions may arise whether a given case falls under a given law; or under which of two or more laws it falls. Thus compulsory vaccination may be required by rules of public health and forbidden by rules of personal liberty. Cases of conflict between adjacent provinces of law may be so frequent that rules of precedence are set up by court; in any case, conflict is the court’s opportunity for choice, and hence for implicit legislation.

The meaning of a law is found not in its statement, but only in its application to concrete circumstances. The courts can not escape the responsibility, therefore, for the stamp which the laws carry. To accept this responsibility would speedily end the present neglect of the art of legal application, and the relations to science and to philosophy which this art must make constant use of. Consciously or unconsciously, a philosophy of life is involved in all original judgment. There can be no understanding of “public policy” apart from some philosophy of social welfare. If we appeal

to the "fitness of things" we are making use of something like a philosophic principle of esthetics. And especially in referring to principles of "justice" or "equity," we are involved in philosophical considerations: there is danger that that which is most difficult will be assumed as self-evident. An individualistic theory of rights (as of property) and a theory founded on social ethics will give rise to very different views of justice. The function of philosophy in the judicial creation of law is not, indeed, that of furnishing a set of first principles from which infallible deductions may be made; but it is that of keeping before the mind of the jurist the place of law in society at large, and even in the cosmic life.

Thus, judicial legislation exists, and has its principles, scientific and philosophic, which should be acknowledged and technically developed. There is less original lawmaking by our representative bodies, and more by our courts, than is popularly supposed. The sharp contrast drawn between legislatures and the judiciary in this function must be abandoned. It would be hazardous to say whether judge or legislator does more to change the law of daily life. All that we are justified in saying is that they differ in technique. Legislators begin and deal more with general policies, or group interests, while judges, in their legislative capacity, start with concrete cases.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Psychology and Industrial Efficiency.* HUGO MÜNSTERBERG. Boston: Houghton Mifflin Company. 1913. Pp. viii + 321.

*Psychologie und Wirtschaftsleben: Ein Beitrag zur angewandten Experimental-Psychologie.* HUGO MÜNSTERBERG. Leipzig: J. A. Barth. 1912. Pp. viii + 192.

While the German and American editions of this work are not exactly the same, yet, as Professor Münsterberg says, "the essential substance of the two books is identical," so that a review of the American edition will serve for both.

In other works the author has applied psychology to education, law, and medicine. In the present work he applies it to industrial activities. The book is divided into three parts, dealing, respectively, with the best possible man, the best possible work, and the best possible effect. The author states as follows the problems he discusses: "We ask how we find the men whose mental qualities make them best fitted for the work which they have to do; secondly, under what psychological conditions we can secure the greatest and most satisfactory output of work from every man; and finally, how we can produce most completely the influences on human minds which are desired in the interest of business."



Science has been applied to industry in many ways so far as the implements and methods used are concerned. But little application of science has been made as yet to the labor used in industry. In a few places in this country the attempt has been made to give vocational guidance to the young, and the writers on scientific management have discussed the matter a little. But Professor Münsterberg is the first to discuss systematically the application of the methods of experimental psychology to labor. As he puts it: "The economic task, with reference to which we want to demonstrate the new psychotechnic method, is the selection of those personalities which by their mental qualities are especially fit for a particular kind of economic work." Two principal methods are used. In the first the mental process as a whole is examined. This method is useful in studying fitness for industrial tasks where a whole or a large part of the mental process is involved. In the second the mental process is resolved into its component parts and each elementary function is tested by itself. This method is useful in testing fitness for industrial tasks where only certain parts of the mental process are involved. The author illustrates these methods by describing experiments which he has performed in applying these methods to the motormen in the electric railway service, to the telephone girls in the telephone service, and to officers in the ship service.

In the second part of the book are discussed methods by which the efficiency of labor can be increased. In the course of it are discussed the most economical methods of learning and training, economy in the movements involved in technical work, the effect of monotony upon labor, the ways of stimulating attention, the effect of fatigue, the influence of such physical factors as climate and of social factors upon working power.

The first chapter of the third part discusses the psychological analysis of economic feelings, demands, and satisfactions. Then are discussed the effects of advertisements, the effects of display in store-windows and elsewhere, and the characteristics which constitute efficient salesmanship. In other words, this part is devoted to the discussion of the problem of how to produce the best possible effect upon the prospective customer.

This is a very readable and suggestive book illustrated with numerous descriptions of experiments by the author and other psychologists. As the author himself recognizes, there are certain larger economic problems involved which he does not discuss. But if the methods he describes could be applied to economic activities there can be little doubt there would be great saving and an enormous increase in the amount of economic goods produced, which increase would probably accrue at first to the benefit of the employers, but would in course of time benefit the wage-earners and the public at large as well.

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*Die Philosophie von Richard Avenarius: Systematische Darstellung und immanente Kritik.* FRIEDRICH RAAB. Leipzig: Verlag von Felix Meiner. 1912. Pp. 164.

Of this work about one half (some eighty pages, including the first part, which is purely exposition) was presented to the University of Ber-

lin as a doctor's thesis. The second, critical part and voluminous notes have since been added. It is a thoroughly scholarly work based upon all the known writings of Avenarius, of which a valuable bibliography is given in the Introduction. The article numbered XV. (in manuscript) is evidently the one referred to as T, though not so given.

It may be that the philosophic public in Germany has taken more kindly to the Avenarian terminology than the English-speaking public, for there is no attempt made to translate his speech into ordinary philosophic language. This may be no bar to the success of the work in Germany, but it is a serious hindrance to its acceptance on this side of the water, for even Mach complained that he had no time to learn the language of one individual.

The expository part of Dr. Raab's work is accurately done, though his method of taking up the Avenarian schemata one by one does not seem to me to be illuminating. There are no broad generalizing statements which would help the reader who does not know Avenarius at first hand.

The critical part suffers even more from this method. It is difficult even for one familiar with Avenarian literature to see, exactly, the bearing of many of Raab's particular criticisms, which are, however, sympathetically made; and he praises the criticism of *Introjection* as perhaps the most valuable work of his author. Empirio-criticism is counted as a kind of positivism, valid within limits. It is denied final validity as a universal world concept because, particularly, of its value judgments. His position seems to be the familiar idealistic position that this is but one phase of the world concept which must, inevitably, be sublated.

"Die Fragestellung nach dem Wert setzt also das Bestehen eines sowohl ewigen, als auch Notwendigen Massstabes voraus" (p. 80). This, too, is familiar. The empirio-criticist is accused of using an absolute standard in attempting to overthrow one: but Dr. Raab has quite misunderstood Avenarius's doctrine of values, I think, and has quite failed to set forth or to understand the impressive transformation of "*pure expérience*" into "*expérience pure*," as Delacroix has put it.

The most significant part of this valuable contribution to an understanding of empirio-criticism is the notes, which contain many valuable citations of German criticisms and appreciations. These warn us that there is a prophet recognized in his own country who has, so far, failed of much recognition here.

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## JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. January, 1913. *Knowledge and Life* (pp. 1-16): RUDOLPH EUCKEN. - Outlines the plan, purpose, and contents of the author's "Erkennen und Leben," and announces an English translation shortly to appear. *Hegel's Criticisms of Fichte's Subjectivism*. II. (pp. 17-37): EDWARD L. SCHAUB. - Criticizes the view that Fichte overcomes the various dualisms in Kant, according to which view,

if it be correct, Hegel can be accorded no philosophical advance. Maintains that Hegel represents an advance over Fichte both in viewpoint and in principle. *The Man of Power: A Reply to Professor Rogers* (pp. 38-52): WARNER FITE.—Replies to Professor Rogers's criticism of the author's "Individualism," restates his theory of obligation, and further develops the conception of "the man of power." *Discussion: Unjustified Claims for Neo-Realism* (pp. 53-56): MARY WHITON CALKINS. Maintains the incompatibility of neo-realism with the standpoints of science, of empiricism, and of common sense. *Reviews of Books*: E. B. HOLT and others, *The New Realism*: E. B. MCGILVARY. C. A. MERCIER, *Conduct and its Disorders Biologically Considered*: GEORGE S. PATTON. A. PFÄNDER and others, *Münchener Philosophische Abhandlungen*: HORACE C. LONGWELL. Rudolph Eucken, *Life's Basis and Life's Ideals*: WINIFRED HYDE. *Notices of New Books. Summaries of Articles. Notes.*

THE PHILOSOPHICAL REVIEW. March, 1913. *Romanticism and Rationalism* (pp. 107-132): FRANK THILLY.—Sketches the history of rationalism, reviews the various attempts on the part of anti-intellectualists and romanticists to refute rationalism, and, in a spirit of defense, restates its fundamental postulate that "experience is somehow intelligible." *The Copernican Revolution in Philosophy* (pp. 133-150): J. E. CREIGHTON.—The Copernican revolution consists in the establishment of the critical method in philosophy, a criticism primarily of the categories, resulting in the construction of a dynamic view of reality. From this point of view criticism is directed against pragmatism and new realism. *Radical Empiricism and the Philosophic Tradition* (pp. 151-164): H. M. KALLEN.—Presents radical empiricism as the most democratic of philosophies, the chief value of which is that it antedates systematization, gives freedom of direction, and flexibility in observation and procedure. *Proceedings of the Twelfth Annual Meeting of the American Philosophical Association* (pp. 165-187). *Discussion: The Neo-Realist and the Man in the Street* (pp. 188-192): WALTER B. PITKIN.—Defends neo-realism against Miss Calkins's charge that its claim to be in accordance with common sense is unjustified. *Reviews of Books*: G. S. FULLERTON, *The World We Live In*: WARNER FITE. H. VAHINGER, *Die Philosophie des Als Ob*: H. M. KALLEN. J. WILBOIS, *Devoir et Durée*: G. N. DOLSON. AMELIA H. STIRLING, *James Hutchinson Stirling—His Life and Work*: J. B. BAILLIE. *Notices of New Books. Summaries of Articles. Notes.*

- Anschütz, Georg. Theodor Lipps's Neuere Urteilslehre. Leipzig: Verlag von Wilhelm Engelmann. 1913. Pp. 175. 3.20 M.
- Avalon, Arthur. Tantra of the Great Liberation. London: Luzac and Company. 1913. Pp. cxlvi + 359. 10s.
- Croce, Benedetto. Saggio sullo Hegel, seguito da Altri Scritti di Storia Della Filosofia. Bari: Laterza e Figli. 1913. Pp. viii + 454. 6 L.
- Fernberger, Samuel W. On the Relations of the Methods of Just Perceptible Differences and Constant Stimuli. Princeton, N. J., and Lancaster, Pa.: Psychological Review Company. 1913. Pp. 81.



## NOTES AND NEWS

For the first time in the history of the British Association psychology will be represented as an independent subject at the forthcoming Birmingham meeting. It appears as a subsection to Section I (Physiology), and among those who have agreed to present papers are: Professor R. M. Ogden on "Experimental Data on the Localization of Visual Images"; Mr. C. Fox, "The Conditions which arouse Mental Imagery in Thought"; Professor Dawes Hicks, "Is there a Process of Psychical Fusion"; Dr. W. G. Smith, "Contrast as a Factor in Psychological Explanation"; Dr. C. S. Myers, "Experiments on Sound Localization"; Professor C. Read, "The Conditions of Belief in Primitive Minds"; Mr. W. McDougall, "A Theory of Laughter"; Dr. Wildon Carr, "The Absurdity of Psychophysical Parallelism"; Miss May Smith, "Two Forms of Memory and their Relation"; Miss E. M. Smith, "Note of Habit Formation in Guinea-pigs"; Dr. F. C. Shrubbsall, "The Relative Fertility and Morbidity of Normal and Defective Stock"; Mr. J. H. Wimms, "A Comparative Investigation of Fatigue Tests"; Miss May Smith, "Some Experiments on Recovery from Fatigue"; Dr. G. Thomson, "Variations in the Spatial Threshold"; Mr. Shepherd Dawson, "A Simple Method of Demonstrating Weber's Law"; Miss S. S. Fairhurst, "Suggestion and Discipline in Spelling"; Dr. C. W. Valentine, "Color Perception and Preference of an Infant"; Dr. McIntyre, "Practise Improvement in Immediate Memory in School Children"; Dr. E. O. Lewis, "Analytic and Synthetic Processes in Learning"; Dr. McIntyre and Miss A. L. Rogers, "Application of the Binet Scale to Normal Children in Scotland"; Mr. R. C. Moore, "Tests of Reasoning and their Relation to Mental Ability"; Mr. W. H. Winch, "Some Additional Tests of Reasoning"; Mr. T. H. Pear, "Modern Experiments on Testimony"; Mr. S. Wyatt, "The Testimony of Normal and Defective Children"; Dr. W. Brown, "Psycho-analysis"; Mr. T. H. Pear, "The Analysis of Some Personal Dreams with Special Reference to Theories of Dream Interpretation," and Mr. C. Burt, "Mental Differences between the Sexes." Joint meetings have also been arranged with the Physiological and Educational sections.

THERE has been launched in Belgium an international magazine, *Isis*, edited by George Sarton, the aim of which is to study the genesis and development of scientific theories. Editorials on the criticism of methods and the philosophy of history, articles on the history of philosophy, of science, of religion, of technology, and of the fine arts, archeological and iconographical notes, and reviews of the most important of recent books, are to be included in the very generous scope of this magazine, which will be published every three months in French, English, German, and Italian. The four numbers will constitute a volume of from 640 to 800 pages. Subscriptions should be sent to M. George Sarton, Wondelgem-les-Grand, Belgium.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### THE EMPIRICISM OF JAMES<sup>1</sup>

WHEN the collection of articles called by their editor "Essays in Radical Empiricism" appeared, more than a year ago, the title must have struck many readers as a singularly happy one; it meant the real message of William James.

To select a particular message and call it the real one is, no doubt, a little arbitrary. For James, because of his rich and many-sided personality, his catholic human sympathy, and the spontaneity of his imagination was able to speak to very different sorts of people. And because he spoke always with the same sincerity, and seemed to adopt now one point of view and now another, or, what was even more confusing, two or three together, those who did not know him have scoffed, and those who did have practised a troubled will to believe. A philosopher gifted with imagination, counting nothing alien to himself that is of human concern, but having deepest of all the instinct for scientific honesty, will rarely seem a consistent thinker to those colleagues whose business is the dialectic of particular issues. Those who learned from James their first lessons in philosophy learned that a fact can not be extinguished by an argument, and that no argument can create a single fact, though its toil be distributed through two semesters and many syllogisms. It is accordingly the respect for facts, the sense for their abundance and variety that characterize the "real" message.

Since James coined the term "radical empiricism" something has happened; philosophy is not nearly so much as it used to be a technique of disguised apologetics or exercises in the formal logic of the higher life. Facts are no longer relegated wholesale to a category of negligible aspects. Something has set the philosopher free to respect his natural powers of observation. It is a victory for simple accuracy and truthfulness; and that is why the title "Essays in Radical Empiricism" may have struck more than one reader of it as

<sup>1</sup> "Essays in Radical Empiricism," William James. New York: Longmans, Green, and Company. 1912. Pp. xiii + 283.

a thrilling title. That is why the book may be said to symbolize the real message of James.

And yet James, in his later work at least, never quite spoke the language of empiricism. The habits and assumptions that he helped so many to outgrow seem to have remained a certain obstacle to his own independence of tradition. His manifold interests and sympathies interfered, perhaps, with his viewing things from any single angle.<sup>2</sup> The reader bent upon understanding James from his books embarks upon no easy task, and it is in no spirit of criticism that I try to indicate some of the qualities of James's style that make his thinking difficult to follow.

The terminology of James was not precisely the language of empiricism; it is reminiscent of the psychological subjectivism that seems now so naïvely gratuitous. "Flux" was a favorite word, and the idea became fundamental and responsible for dialectical consequences. But will this term stand empirical examination? Is not the use of it to describe what we used to call "the outer world" coming to seem a little far-fetched? Of course if we identify our environment of facts with the shifting panorama of perception we can describe our world in terms of flux, sensations, and streams. That, however, is what we have learned not to do. A stream is of course a stream wherever we encounter it; likewise is a cobble-stone a cobble-stone and the moon the moon. It may be that the moon and the cobble-stone are really instances of an objective flux, but it is not at all evident that the term describes happily their empirical characteristics. How the idea of flux leads to the conclusion that we carve it into a world of objects tainted with unreality needs no explanation here.

Another source of perplexity, until one has taken a good deal of trouble in comparing one statement with another, is the term "pure experience." For understanding this expression one naturally turns to the essay entitled "A World of Pure Experience," and here one gets the impression that "pure experience" is a way of saying "radical empiricism." A world of pure experience is apparently the experienced empirical world with whatever continuities and discontinuities, whatever flux and rigidity, whatever dependable and empirically predictable regularities, appear. This, however, is not the rôle that the concept of "pure experience" plays in James's philosophy. The concept seems to grow dialectically out of the explanation of the sense in which consciousness may be said to exist, and when pure experience is directly described, it is, James tells us, something which "only new-born babes or men in semi-coma from

<sup>2</sup> See some excellent remarks by Lovejoy in this JOURNAL, Vol. IX., page 630.



sleep, drugs, illusions or blows'' may be said to possess (pp. 93-94; also p. 74).

Another kind of difficulty has its sources in James's interest in the sincere opinion of anybody, his willingness to discuss fairly and frankly any question under the sun, and his generous eagerness to get his opponent's point of view. This is, however, a compromising virtue. It leads one to make concessions that falsify one's own position. For instance, why should an empiricist ever ask or seek to answer the question "How can two minds know one thing?" This question arises in the context of epistemological subjectivism; it has a dialectical, not a natural foundation. You have to introduce one to the point of view of post-Kantian epistemology before he can even understand the question. An empiricist might just as properly ask, How can the souls of the unbaptized enter the Kingdom of Heaven? Taking each question in the content of its own presuppositions, the answer comes instantly; they can not. The question, "Does consciousness exist?" is an empirical question, but if, empirically speaking, different minds are continually knowing the same things, it is hardly an empirical inquiry to ask whether the thing can possibly be done.

The spontaneous humanity of James interfered with his empiricism. In one passage he insists (p. 279): "To speak more seriously, the one fundamental quarrel empiricism has with absolutism is over the repudiation by absolutism of the personal and esthetic factor in the construction of philosophy." James always put his heart into his philosophy, and he found it apparently hard to believe that the absolutist might do so equally. The absolutist is in the unfortunate position of having to substitute arguments for observations, his heart is, perhaps, as conventional and straight-laced as James feels it must be, but then such a heart can throb very earnestly for its block universe. In any case, a personal objection is not an empirical criticism. James has shown over and over again, no one more conclusively, that we must not "slip from logical into physical situations (p. 111, note), and that any propositions about existence are justified only by existential evidence. "The question, 'shall fact be recognized as an ultimate principle?' is the whole issue between the Rationalists and the Empiricists of vulgar thought" (p. 272). What can oppose the authority of facts when it is a question of facts? "Nothing in earth or heaven. Only the Anselmian proof can keep fact out of philosophy" (p. 272). This is empiricism, and its roots are in the writer's honesty and good sense, rather than in a concern for the personal and esthetic factor.

But what has, perhaps, most of all compromised the later philosophy of James was his attachment to supernaturalism. To find him

calling radical empiricism a sub-species of pantheism<sup>3</sup> is enough to make a reader take his head in his hands. No one can be blamed for getting the impression that pluralism and empiricism, not to mention pragmatism, are ways back to theism. To suppose, however, for a moment that the philosophy of these titles was motivated by the spirit of apologetics would turn "Essays in Radical Empiricism" into a ghastly irony.

That perplexing feature of James's philosophy that he called "the right to believe" has not yet, I think, been appreciated. The proper word for it is a word seldom heard in philosophy, the word "imagination." What James was really doing whenever he argued the case of "the right to believe" was to defend the place of the imagination in the total intellectual life. The imagination makes a great contribution; it often speaks a language frankly picturesque and symbolic. It supplies the dramatic metaphors of religion, describing thereby not the facts as science would describe them, but the value, significance, or bearing of the facts for human interests, as poetry does. James, of course, did not call his theism either imagination or poetry, but it belongs to that region of ultimate achievement that James himself called "vision," the region of ideal imaginative preferences, which, as Santayana says, ought never to be matters of controversy. The right to believe is, from this point of view, the right of a free mind to frame for itself or to accept from a great tradition whatever symbols are apt and interesting and able to transform calculation into spontaneity. I am well aware that this is rather far from what James meant. I think, however, that it is something like what he would have meant had he always remembered his principle of empiricism.

Acknowledgments like these are, it seems to me, the first step to take in appreciating what is fine and true in James's philosophy. "James was by no means a good expounder of his philosophy as a whole, . . . and he was not wont to remember all his other and perhaps counterbalancing ideas when his presentation of the idea for which he was at the moment concerned was in full course.<sup>4</sup> If, accordingly, there is much in James that seems to contradict his empiricism, a reader need not be confused by it, nor need we find therein any obstacle to holding that James's real message to his generation was that of loyalty to the facts.

The essays brought together in the present volume constitute in the opinion of their editor a coherent treatise rather than a collection. "It sets forth systematically and within brief compass the doctrine

<sup>3</sup>"A Pluralistic Universe," pages 34-35.

<sup>4</sup>Lovejoy, this JOURNAL, Vol. IX., page 630.

of radical empiricism" (p. vi). This claim is justified in a brief and helpful preface.

The first essay in the volume startles even yet by the home-thrusting title, "Does Consciousness Exist?" To be sure it exists, but not in the sense claimed by the epistemology that has ridden the word in a somewhat skyrocket career. "That entity is fictitious, while thoughts in the concrete are fully real. But thoughts in the concrete are made of the same stuff as things are" (p. 37). What then determines whether a bit of this same stuff is a thought or a thing? Not anything in the nature of the stuff; it is the context in which the stuff is located that makes it into a thought or a thing. Do I, for example, observe a thought or a thing when I look at the typewriter? That depends, it would seem, upon me and the context of associations that I bring to bear upon it. I can take it as the content of an observation, or I can take it as an effect and cause in a context of physical results and influences. Taking an object as the content of an observation, I locate it in the sequence of a personal biography. It is thereby defined as an instance of consciousness. Or I can take the object as a physical effect of physical causes, and a contributing cause of other physical effects.

This is very acute, but it is a pity that in so brilliant an essay it should not occur to the writer that a thought is a case of thinking. What reason is there for taking the room where I sit and the book I am reading as instances of thinking on my part? This is, no doubt, a verbal criticism, but the natural distinctions indicated by words offer one guide to empirical sanity. "Things" in any context whatever are not good examples of thinking or of "thoughts," and it may be doubted that James would ever have chosen them had he not been discussing a theory he did not believe, and gone so far as to take his examples of a thought from idealistic usage.

However, the stuff which is located in one context or another and thereby characterised as a thing or a thought is, in either case, an instance of experience. What can we say of it, however, before it becomes either a thing or a thought? Evidently not much; we can, if we choose, call it pure experience, meaning that it is not yet referred to either context, but is a candidate for both. And if called upon to say more, we can quote the following: "Pure experience is the name which I gave to the immediate flux of life which furnishes the material to our later reflection with its conceptual categories. Only new-born babes or men in semi-coma from sleep, drugs, illness or blows may be assumed to have an experience pure in the literal sense of a *that* which is not yet any definite what, though ready to be all sorts of whats; full both of oneness and manyness, but in respects that don't appear; changing throughout, yet so confusedly that its



phases interpenetrate and no points either of distinction or of identity can be caught. Pure experience in this sense is but another name for feeling or sensation" (pp. 93-94). In the preceding essay (p. 23) this occurs: "The instant field of the present is at all times what I call the 'pure experience.' It is only virtually or potentially either object or subject as yet." And again (p. 94): "Far back as we go, the flux both as a whole and in its parts is that of things conjoint and separated. The great continuance of time, space, and the self envelope everything, and flow together without interfering." This is brilliantly put, but it is hardly the language of innocent empiricism. Pure experience is not experience at all in the simple and natural sense, since one must be a new-born babe or not in one's right mind to detect it.

As above stated, however, this is not what the essay "A World of Pure Experience" is about; such a world is by no means the world of a new-born babe. The essay is the exposition of a "*Weltanschauung*," and this *Weltanschauung* is called "radical empiricism." Radical empiricism reminds us that things and experiences appear in contexts; we get them in a mesh of conjunctive relations. When we describe the relations we describe genuine aspects of the things in the context. The fact that things are found in contexts and not in isolation does not generate a problem. The only reason for insisting upon this is that strange people called metaphysicians have been saying for a good while that things in relation presupposed a synthetic activity of the mind, a kind of matrimonial noumenon without whose joining agency things must need remain asunder. Another curious idea of these same people has been that things known are quite inaccessible to the one that knows them, who, therefore, does not really know them, although he can behave intelligently with reference to them. A hypothetical thinker that can do miraculously what the actual thinker can not do at all is accordingly invoked to overcome the discontinuity of thinker and object. Here, then, is a problem of establishing continuity between knower and object without leaving the level of observable experience. But who or what is responsible for the problem? It seems to be a problem of establishing or recovering continuity. Taking subject and object statically, the subjectivist denies continuity; taking them empirically and dynamically, James describes the activity of knowing as a process of transitions that continue and corroborate. "In this continuing and corroborating taken in no transcendental sense, but denoting definitely felt transitions, *lies all that the knowing of a percept by an idea can possibly contain or signify*" (p. 56). "But continuous transition is one sort of conjunctive relation; and to be a radical empiricist means to hold fast to this conjunctive relation of all

others" (p. 48). It is all very acute and all very interesting, but must it not inevitably breed confusion to take a problem that arises in one universe of discourse and try to handle it in another, and in one where the problem could not possibly arise and where it can not possibly belong?

In the third essay, "The Thing and Its Relations," James states explicitly that he is going to examine the dialectic by which it is argued (or used to be), that one and the same world can not be cognized by different minds. In spite of the doctrine of internal relations it does not follow that a thing becomes two things by being related to two minds, although, of course, the definition of the thing in one relation is not identical with the definition of the same thing in another relation. With this essay the reader should compare Chapter II. of "A Pluralistic Universe" and the paper on "Absolutism and Empiricism" in the present volume. The criticism is well summed up in James's definition of intellectualism:<sup>5</sup> "The treating of a name as excluding from the fact named what the name's definition fails positively to include is what I call vicious intellectualism." The argument from distinguishable definitions is, therefore, not a reason for doubting that two minds can know one thing. The pseudo-psychological theory, however, by which things in becoming known receive an exclusively subjective status presents a difficulty less easy to deal with if one grants the assumptions that generate the difficulty. "The objections that now confront us arise from the nature supposed to inhere in psychic facts specifically" (p. 125). James solves the difficulty by his conception of pure experience developed in the first essay. Pure experience is *materia prima* of both thoughts and things. Let the pure experience in question be "*ein Baum*" dear to philosophers of a previous generation, or rather, let it be what we call a tree when we have located it in the "physical context." Lovers may sit under it, children may gather nuts from it, a suicide may hang himself on it. The same *materia prima* is given a place in as many different currents of personal experience as there are people who take an interest in it. The question whether two minds can know one thing is simply the question whether there are two people who care about it and appropriate it to two different biographical contexts. There is solved the problem of Essay IV., "How Two Minds Can Know One Thing," with which compare Article II. of "The Meaning of Truth," particularly pages 48-49.

Not all of pure experience gets located in the context of things or in the context of consciousness. Some of it remains just pure *materia prima*. And here a quotation (p. 139), perhaps superfluous:

<sup>5</sup> "A Pluralistic Universe," page 60.

"The central point of the pure experience theory is that 'outer' and 'inner' are names for two groups into which we sort experiences according to the way they act upon their neighbors." In this chaotic universe, however, there is room "for the hybrid or ambiguous group of our affectional experiences, of our emotions and appreciative perceptions" (p. 141). In the case of these, "the relatively 'pure' condition lasts." No occasion has arisen for any exclusive classification of them (p. 146). Affectional facts provide, then, no evidence for original spirituality of being as things provide none for original materiality of being (p. 138 and p. 148). Indeed, "there is no *general* stuff of which experience at large is made. There are as many stuffs as there are natures in the things experienced. If you ask what any one bit of pure experience is made of, the answer is always the same: It is made of *that*, of just what appears, of space, of intensity, of flatness, brownness, heaviness, or what not" (p. 26).

One task for empiricism has been to assert "The Experience of Activity" (Essay VI.). Activity is none the less experienced whatever theoretical positions are found incompatible. "We have the whole butt and being of it in our hands, and the healthy thing for philosophy is to leave off grubbing underground for what effects effectuation, or what makes action act, and try to solve the concrete questions of where effectuation in this world is located, of which things are the true causal agents there, and of what the more remote effects consist" (p. 186).

The remaining six essays, although three of them are in James's best manner, add nothing positive to the doctrine thus far enunciated. It seems to the present reviewer that the doctrine is not so much that of radical empiricism as that of "pure experience," and that "pure experience" has much more the nature of a theory than of something observed. It is a theory, too, of an apparently Kantian stripe. The mind is provided with two categories, thought and thing, which are applied to a *materia prima* which is neither, and therefore neutral or pure. None can experience this *materia prima* as such except he who is unable to give an account of it, emotional states alone excepted. It is hard to see how the concept of "pure experience"<sup>6</sup> can be defended on the ground of its empirical accuracy. The spirit is the spirit of empiricism, of standing by and upon the facts, but the problems are inherited from idealism and the language is that of subjectivism half overcome.

Of the remaining essays number eight, written in French, is a compact and admirable summary of James's position on the epistemological problem. In number seven, the essence of humanism is,

<sup>6</sup>The "pure experience" of James is not the "*reine Erfahrung*" of Avenarius.



apparently, empiricism, the gradual adoption of which is producing a shifting of perspectives difficult to describe, and of which it is not easy to predict the issue. Its essential service, in any case, "is to have seen that though one part of our experience may lean upon another part to make it what it is in any one of several aspects in which it may be considered, experience is self-containing and leans on nothing" (p. 193). It does not lean on "reality"; reality leans rather on it, for "reality, however remote, is always defined as a terminus within the general possibilities of experience . . ." (p. 201).

In the delightful essay that brings the volume to a close, "Absolutism and Empiricism," James returns to his criticism of the dialectic of monism, urging with admirable incisiveness and good humor the powerlessness of any merely logical apparatus to yield existential discoveries. Here, too, he confesses in an irresistible way his own temperamental bias. The passage is too good not to quote. "The through-and-through universe seems to suffocate me with its infallible, impeccable all-pervasiveness. Its necessity, with no possibilities; its relations, with no subjects, make me feel as if I had entered into a contract with no reserved rights, or rather as if I had to live in a large seaside boarding-house with no private bedroom in which I might take refuge from the society of the place" (p. 277). A flashing insight was the identification of consciousness with the tradition of the soul (p. 2), and the empiricist of the psychology returns to us in this most characteristic passage: "Let the case be what it may in others, I am as confident as I am of anything that, in myself, the stream of thinking (which I recognize emphatically as a phenomenon) is only a careless name for what, when scrutinized, reveals itself to consist chiefly of the stream of my breathing. The 'I think' which Kant said must be able to accompany all my objects, is the 'I breathe' which actually does accompany them" (p. 37).

Nothing could be more superfluous than to praise the work of William James. These essays were contributions to a controversy which they very largely helped to terminate. It should be the purpose of those who owe to James so much of intellectual emancipation to free the problems he discussed from all dependence upon traditional or arbitrary dialectic, and to give them a simply empirical exposition such as only a few years ago it was impossible to give.

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THE AVIARY THEORY OF TRUTH AND ERROR<sup>1</sup>

*Socrates*: "Let us suppose that in the mind of each man there is an aviary of all sorts of birds . . . some flocking together apart from the rest, others in small groups, others solitary, flying anywhere and everywhere—and let us suppose that the birds are kinds of knowledge."

*Theætetus*: "Granted."

*Socrates*: "We have determined . . . that a man can not fail to possess that which he possesses; therefore, in no case can a man *not* know that which he knows. But still he may get a false opinion about it. Thus when the various numbers and forms of knowledge are flying about in the aviary and one takes out a particular one for use, he sometimes takes out the wrong one; (thus) when he thought eleven to be twelve he got hold of the ring dove when he wanted the pigeon."

*Theætetus*: "Yes, that is quite reasonable."

*Socrates*: "But when he catches the one he *wants*—then he is not deceived and thus false and true *opinion* may exist . . . for we are not (here) driven to the inference that a man does not possess that which he possesses, whether he is deceived or not, and yet I fear a greater difficulty is looking in at the window."

*Theætetus*: "What is that?"

*Socrates*: "How can the exchange of one knowledge for another ever become false opinion?"

*Theætetus*: "Perhaps, Socrates, we may have been wrong in thinking only forms of knowledge for our birds. Perhaps there ought to have been forms of ignorance as well, flying about (with the forms of knowledge) and he who sought to take one (of the birds) may sometimes have caught a form of knowledge and then a form of ignorance and then he will get a false opinion from ignorance and a true one from knowledge."

*Socrates*: "I can not help praising you, Theætetus, and yet I must beg you to reconsider your words. Let us grant what you say. Then, according to you, he who takes ignorance will have a false opinion. Am I right?"

*Theætetus*: "Yes."

*Socrates*: "But he will certainly not think he has a false opinion."

*Theætetus*: "Of course not."

*Socrates*: "Then he will think he has captured knowledge and not ignorance."

<sup>1</sup> Read at the meeting of the Western Philosophical Association, April, 1913.

*Theætetus*: "That is clear."

*Socrates*: "And, thus, after a long journey we come around to our final perplexity. The accuser will retort upon us 'Oh my excellent friends,' he will say, laughing, 'If a man knows ignorance and knows knowledge can he think one of them which he knows is the other which he knows? or if he knows neither of them can he think the one he does not know is another he does not know? or if he knows one and not the other, can he think the one he does not know is the one he knows?' . . . What are we to say to this, *Theætetus*?"

*Theætetus*: "Indeed, Socrates, I know not what to say."<sup>2</sup>

The first division of Professor Montague's most interesting essay on "A Theory of Truth and Error" in the volume "The New Realism" deals with the meaning and locus of truth and error. The most general form of the thesis of this section is that "true and false" are attributes of the *objects* of belief or judgment, not of the *act* or *process* of belief. They have been attached to the latter, by "the verbal fallacy of metonymy." When we say: "What a fine sight," we do not mean that the act or process of seeing is fine. We mean that the thing seen is fine. So when we speak of beliefs or judgments as true or false—we mean that the object or content of the belief or judgment is true or false. "There would be no sense," continues Professor Montague in "calling an act of belief *as such* either *true* or *false*." An act of belief is a *mental* process and as such belongs to psychology, not to logic. "If any one has any doubt on this point," says Professor Montague, "let me put this question" (which is evidently regarded as conclusive): "If we wished to know whether certain beliefs that we held about the properties of triangles were true or false whom should we consult? The psychologist? Certainly not. We should go to the mathematician. But why? . . . If the adjectives true and false applied to the beliefs and mental processes, he should be the one to settle our difficulties." That true and false apply to the objects and not to the act of belief will appear more clearly if we remember that "other adjectives apply to beliefs in the *subjective* sense. If, for example, instead of being interested in the truth or falsity of a belief we were interested in whether it were comforting, inspiring, or healthy we should then very likely go to the psychologist."<sup>3</sup> So much for the locus of the "true" and the "false." It is obvious that they dichotomize "all possible objects of thought" just as knowledge and ignorance divide the birds in the aviary.<sup>4</sup>

<sup>2</sup> Jowett's translation.

<sup>3</sup> "The New Realism," pages 256 and 257.

<sup>4</sup> Two points are suggested here, which bear only indirectly upon the rest of the discussion. First, if the "act" of belief "as such" be a case of conscious-



With the adjectives "true" and "false" assigned to the *objects* as distinguished from the *act* of belief, we pass to the definition of the distinction between truth and error. "I hold (says Professor Montague) that the true and false are respectively the real and unreal considered as the objects of a possible belief or judgment."<sup>5</sup>

"Truth and error are respectively belief in what is real and unreal."<sup>6</sup> Now observe that no matter what the distinction between real and unreal may turn out to be it is here assumed that it is entirely independent of belief. When we take this in connection with the definition of belief we have a difficulty which should be disposed of before we go on to define the difference between the real and unreal, and this difficulty looks very like the one which Socrates and Theætetus encountered with the aviary. "Truth and error are respectively belief in the real and the unreal." But belief is defined as "the attitude we take toward any proposition that *appears* to be true or real and carries with it a tendency to act on that proposition."<sup>7</sup> Do not these two definitions constitute a dilemma in which "the object of belief" must be either all truth or all error? If we can believe only that which "*appears* to be true or real" whence comes a belief in the unreal—which constitutes error? If here we appeal to the term *appears*, which, indeed, boldly appears in italics, we encounter, first, the ambiguity of the term, and next, the question whether either connotation of the ambiguity can save us. If "what *appears* to be true or real" means "what we *believe* to be true or real" then all we have accomplished is a tautology, and there is still no belief in the unreal in sight. If "that which *appears* real" means that the object of belief is only an "appearance," that is, that it has the character of "appearance" to the believer, then it only remains for Mr. Bradley to offer the right hand of fellowship.

Must we not conclude, then, that the use of the term "appears"

ness and if consciousness is an external relation, then we have the interesting situation of terms that are "objective" and true or false," joined by a relation that is "subjective" and neither "true nor false." Second, is it not disconcerting to find a realist characterizing "comfort" and "health" as "subjective"? (1) In the realistic world of objective "simple entities and complexes" comfort and health, whether simple or complex (what is the realistic criterion of simple and complex?), must be as objective as any other entity? (2) More empirically, how in these days of bacteriological diagnosis can "health" be "subjective"? And if there is a question of "comfort" it must always be the comfort of eyes or digestion or social, financial, etc., comfort.

<sup>5</sup> *Ibid.*, page 252.

<sup>6</sup> *Ibid.*, page 262. Although the adjectives "true" and "false" do not belong to the *act* of belief, yet it is only as objects of belief that the real and the unreal are true or false. And it is worth while to note also what havoc these statements make of the doctrine of external relations.

<sup>7</sup> *Ibid.*, page 255.

in the definition of belief is a case of what Bode calls "the fallacy of the innocent bystander"? When belief is said to be an attitude toward what "appears" real—we are speaking not from the believer's standpoint, but from the standpoint of an external, and, we may add, omniscient observer, who is looking on and comparing what is now going on with what is to come later.

With truth and error as belief respectively in the real and the unreal, and with the real and unreal determined entirely outside belief and judgment, and given to the latter ready made, as, indeed, they must be according to the doctrine of consciousness, as "an external relation," how are mistakes possible except from the standpoint of the omniscient bystander? For belief in the unreal as *unreal* is no more a case of error than is belief in the real as real. The only possibility of error is that the unreal shall "appear" as real. For though *error* is defined as belief in the unreal, *belief* is so defined that the unreal can not be an object of belief except in the disguise of the real. In the words of Socrates "even if he has captured ignorance he will think he has captured knowledge." If the only object of belief is that which appears real, how is one to believe that he ever has believed in the unreal? So long as we stick strictly to the above neo-realistic definitions of belief of truth and error, must we not answer with Theætetus: "Indeed, Socrates, I know not what to say"?

Perhaps the discussion thus far will appear to some to be very appropriately prologued by "a piece of Socratic quibbling." As for Socrates, no doubt he sometimes, perhaps often, quibbled, but not always; and this was one of the times when he did not. The difficulties we have encountered are far more than verbal. In general they are the outcome of an attempt to substitute for the alleged "subjectivism" of absolute idealism an objectivism equally absolute. Again they are the difficulties that pursue any attempt to convert one term of a logical distinction into an ontological absolute. An embarrassing feature of these difficulties is that they always seem to be essentially the same as those of the directly opposite position. Also, it seems impossible to avoid an outcome that differs in little but name from that of the opposition. What important difference is there between the "subsistence of realism as the all-inclusive and absolute *summum genus*"<sup>8</sup> of being and "the all-inclusive system of ideas" of absolute idealism?

Returning to our particular case, we can cordially agree with Professor Montague that "there is no sense in calling a (contentless) act of belief as such true or false." But by the same token should we not say the same thing of the kind of "objects" we get by this

<sup>8</sup> *Ibid.*, page 253.

partition of belief? For the reason, namely, that a mere actionless object "as such" no more exists than does a contentless "act" or "process" of belief "as such."

The immediate source, then, of the troubles above recounted lies in the partition of belief into a contentless "subjective" "mental" act on the one hand and an actionless content or "object" on the other. And is not this a case of the sort of abstraction that has kept the "epistemological problem" going so long? What, when, or where is there just an "act" or "process" as such? Is there a "process" of brickmaking without bricks, of talking without language, of hearing without sounds?

No doubt the statement that truth and falsity are "attributes of the real and the unreal as possible objects of belief," taken out of its context might well be used to turn the edge of the above charge of vicious partition. But also, there can be no doubt that the point of the argument of neo-realism as a whole is to show that "true" and "false" are qualifications of the "objects" as distinguished from and wholly independent of the "act" of belief which is made a merely "psychological" and "subjective" affair.

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## DISCUSSION

### THE THEORY OF INDEPENDENCE—ONCE MORE

READING Dr. Isaak Husik's criticism<sup>1</sup> of Professor Perry's conception of independence,<sup>2</sup> I have yielded to the temptation, hitherto successfully resisted, to venture a passing word of my own upon this subject. I say "venture" because in each case in which I have been tempted to discuss matters with the new realism I have discovered that the point which seemed to me central and decisive was barred off and labeled "Not for Discussion"—either because it represented a universal, and therefore indisputable, assumption; or a groundless assumption; or a definitive pronouncement of science; or a fundamental principle of logic; or a principle embodied once for all in the "Platform," such as the externality of relations; or, as in the case before us, because "it introduces practical and dynamic considerations which are more confusing than clarifying." I fear, then, that no other course is open but to lay hands boldly and rudely upon the forbidden consideration and insist upon introducing it.

<sup>1</sup> "Theory of Independence," this JOURNAL, Vol. X., page 347.

<sup>2</sup> Essay on "The Meaning of Independence" in "The New Realism," New York, 1912.



Professor Perry defines independence by assembling the empirically discoverable cases of dependence and making independence consist in absence from the list. In this sense of "non-dependence," the object is independent of its being known; this, of course, being the point of the definition. Dr. Husik questions the validity of the method as well as the completeness of the list. My own criticism is to add that, precisely because he has rejected the "practical and dynamic considerations," Mr. Perry has omitted a case of independence which is not only important but perhaps fundamental, namely, personal independence.

First, however, I must enter the objection that "independence" is not the simple equivalent of "non-dependence" any more than "immoral" is the equivalent of "non-moral." To say that the philosophy of Berkeley's "Principles" is not moral philosophy is not necessarily to condemn it. Mr. Perry admits that independence is not absence of relation, but absence of some particular relation of "dependence." In fact, his problem is to define independence-in-relation. But the absence of a *particular* relation is as positive and particular a fact as the presence of that relation. In a word, then, we must distinguish between the absence of dependence and the opposite of dependence. Absence of dependence may stand only for irrelevance and mean that the relation of *A* to *B* is a relation neither of dependence nor of its opposite.

That the distinction is an important one we may now see by turning to the rejected "practical and dynamic considerations" and studying the sort of dependence or independence to be found between man and man. It is here that we find our case of personal independence. And here we see that independence, so far from being a case of mere non-dependence, is, as compared with personal dependence, if anything the more positive fact. So far as I can see, this sort of independence (or dependence) is nowhere accounted for in Mr. Perry's list; and it is hard to explain the absence of so conspicuous a case of independence except by the prepossession that persons are not to be counted among the reals. Personal independence implies, however, equally with personal dependence, a relation of personal interest—a personal relation. It means something to assert my independence of my colleagues, of my parents, or of my wife, but nothing whatever to assert my independence of the Emperor of China. Personal independence implies a purpose to be attained, and, at the same time, in the attainment of this purpose, a relation to some other person (or it may be an inanimate object) whom I am bound to consider. Independence is achieved in the attainment of that purpose *in this relation*. Thus we may say that

<sup>1</sup> "Theory of Independence," this JOURNAL, Vol. X., page 347.

Mrs. A. is dependent upon Mr. A. for the use of a motor-car, but not if she has no desire to use a motor-car. In this case neither "dependence" nor "independence" is relevant to the situation. Suppose that Mrs. A., having a desire to use the car, nevertheless proudly conquers her desire; in a measure she becomes independent. Suppose that she conquers the objections of Mr. A. and obtains a free use of the car by a valid guarantee to respect his convenience; this is a more positive independence. Suppose, however, that her father gives her a car; she is still independent, but only because she is a wife. This is usually what we mean when we say that the wife has "an independent income"—independent, of course, of her husband; for, in relation to other persons, most wives have an independent income.

When, therefore, I assert my independence of you, I mean, not that you have no interest for me—this is belied by the fact of my assertion—but that whatever you may do to me or say to or of me, I shall be able to meet you with an act of my own which, with full consideration of what you say or do, will give me what I want. This is the positive meaning of the relation in which what you do "makes no difference." What you do does indeed make a difference; but let me know what you will do, and I will realize my ends (not to speak of yours as well) in an action molded to suit. In this sense it is clear that independence implies creative intelligence and will. If Mrs. A. has no will of her own, no amount of private income will make her independent. If she is lacking in intelligence and confronts every proposition from Mr. A. with blind opposition, she creates difficulties which make her more than ever dependent. Thus, independence is the property of a being *qua* self-conscious and intelligent. B. needs a step-ladder, but finds only a table and a chair. Realism would say that a step-ladder is a step-ladder and a chair a chair; and therefore that B. is strictly dependent. But by an act of intelligence B. makes a step-ladder out of a chair-upon-a-table and thus secures his independence of the makers of step-ladders, tables, and chairs.

I shall not attempt in this passing comment to develop the bearing of this kind of independence upon the kinds enumerated by Mr. Perry. My question would be whether this would not turn out to be the only kind of independence which satisfies the demand of independence-in-relation. Mr. Perry points out that the hypotenuse of a right-angled triangle is not dependent upon the other sides except as the line in question is to be regarded as an hypotenuse. My question would be how it could ever be regarded as an hypotenuse except as it wanted to be, or some one wanted it to be, so regarded. And the same question applies to cause and effect. The effect depends

upon the cause *if you desire the effect*. Otherwise—well, otherwise I, for one, am at a loss to find anything to say; but it seems to me that a neo-realist is limited to the statement that the effect *follows* the cause. In brief, then, my question would be whether any case of dependence whatever will not imply a personal point of view which is foreign to a realistic, at least a neo-realistic, world.

My present purpose, however, is to point out that in ignoring the case of personal independence Mr. Perry, though a foe to epistemology, follows a curiously blind tradition of epistemological theory. The history of epistemology, at least of English epistemology, might be written as “The History of the Knower and his Chair.” Apparently, the chair (though sometimes the table) is the epistemologist’s sole piece, not only of household furniture, but of mental furniture. Yet presumably the epistemologist is not without friends, whom he knows, and by whom also he is known. His friends never appear, however, in any analysis of knowing. The traditional and universal basis of discussion is the relation of a knower to an inanimate and unknowing known. This determines the type of knowing and the final theory of knowledge. The case of knowing a fellow-knower appears, if it appears at all, only as a curiously complicated, but not really enlightening, case of knowing, to be relegated to an appendix. It is quietly assumed that the complications introduced by the fact of knowing an object by which you can at the same time be known would in no wise compel a revision or a new choice of type.

I call this a curiously blind tradition; for when we look at the matter squarely we can see no reason why the case of knowing your fellow-knower should not be at least as genuine, and therefore as typical, a case of knowing as the case of knowing the chair; and if it should turn out that you know your fellow-knower better than you know the chair, the case would be more illuminating and more instructive as regards the nature of knowledge—the position of the typical and the typified would then be reversed. There appears to be no reason for dwelling upon the case of the chair except that it is simpler—which means that it is easier to talk about.

The consequences of reversing the type of the knowledge-relation would be too long a story for the present writing and I shall confine myself to two suggestions. First, I will suggest that that stupefying question, Is there an external world? which has made so much of our modern philosophy stale, flat, and unprofitable—on this point I can weep with the new realists—that question would never arise. When Berkeley evolves the formula, *esse est percipi*, he is thinking exclusively of the chair, or of “the table I write on.” When he comes to his fellow-knower he completely changes his ground. Idealism stands now, not for the doctrine that the being of things is their



being known—by another—but for the impossibility of attributing being to “inert matter.” It is not difficult to see why the ground is changed. One may easily enough make the *esse* of the chair a mere *percipi* because the chair can not protest. If I make my fellow-knower merely an idea in my mind, he, even as idea, will retort by making me an idea in his mind. Self-preservation demands, then, that I shall grant him the courtesy of an independent existence; but no such courtesy can be enforced by the chair. It seems safe to say, then, that if epistemological analysis had been concentrated upon the process of knowing objects which, like our fellow-men, can not only be known, but can know and reply, subjective idealism would never have been heard of.

My second suggestion is the question whether, if the knowing of the fellow-knower were regarded as the typical case of knowledge, we should face a flat disjunction between idealism and realism. Idealism holds (at least) that an object is characterized—acquires a real quality and character—in being known. Realism holds that the character of the object is independent of its being known; though Mr. Perry makes the dangerous admission that in becoming known it may acquire a new character. Now, to common-sense observation the character of the chair is unrelated to its being known. This observation is to my mind superficial, but it is plausible and for purposes of argument may be allowed to pass. In the case of your fellow-man the statement is not even plausible. What a man is, is strictly relevant to the relation in which you know him—and more strictly relevant to the extent that the relation is clearly defined. It is a common remark that a man may present very “different sides of his character” to his family and to his employees. But any side of character implies a relation to some sort of “other,” be it man or nature. To be a politician one requires a political situation; to express, or even to have, a taste in music, a musical world. What “he” would be apart from any situation, we can not conceive; a man without an environment would have nothing to say and no side of character to express. And yet, all the while, as a knowing being, he is, as we have seen, an independent being. His character and his opinions, though relevant to his situation, are yet, so far as they are formed self-consciously—and thus real character and real opinions—not the reflection of his situation, but the expression of independent judgment and choice. Thus your human object of knowledge is both an independent being and a being whose character is constituted in the process of being known.

May it not turn out, then, that this is just the independent being for which the realistic metaphysics, old and new alike, has been seeking? The new realism, nothing if not scientific, will of course re-

sent the suggestion as superstitious. And I quite appreciate the difficulty of erecting upon this basis a detailed logic of science. In the meantime it may be well to reflect upon the possible implications of Bacon's *natura parendo vincitur* and once more recall the case of the chair, the table, and the step-ladder. By constituting the chair upon the table into a step-ladder I win a certain independence, not only of the intentions of those who made these things, but of the general constitution of nature. Upon what ground may you deny that the chair upon the table is really a step-ladder? Yet no laws of nature are broken; in other words, nature maintains her independence. I believe that the relations typified in this crude illustration may be read far into the general process of scientific construction.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Interpretation of Dreams.* SIGMUND FREUD. Translated from the third German edition by A. A. BRILL. New York: The Macmillan Company. 1913. Pp. xii + 510.

"*Flectere si nequeo superos, Acheronta movebo.*" No more exquisite motto could have been discovered for the book whose translation lies before us. For it is the underlying principle of Freud's theory that the dream is the product of important mental trends which, owing to their unpleasant character, are unable to reach the higher levels of consciousness in their true forms; but with the partial suspension of psychic "censorship" during sleep, they may then come into consciousness, subject to certain mechanisms of distortion, in the rôle of dreams.

Within the short interval of its publication, it was not to be expected that the third edition should show very marked differences from the second, nor does it, though it is far from a mere reprinting. The literary excellence of the original is known to many of us, and it is unfortunate that the translator should not combine his accurate knowledge of the material with the ability to preserve better the former quality. One must take the charitable view that what is very well worth doing, may be worth doing not so very well; there are some lapses, however, that careful editorship should have guarded against.

The simple statement that the dream is the fulfilment of a wish is not of itself a very debatable proposition. For it must be apparent that from a dynamic standpoint all psychobiological activity may be regarded as the expression of organic trends, including the processes to which psychoanalysis has not altogether wisely applied the term *wish*. The essential issue is not raised until we ask the question "what wish," and attempt to demonstrate genetic relationship between the manifest content of the dream and certain latent dream thoughts that it is supposed to symbolize.

The theory rests upon the postulate that ideas which come up in free

association with the manifest content, in the analysis, may be regarded as having been symbolized by the manifest content in the dream. Once this is admitted, there is opened a wide vista of elaborations regarding the motive and mechanisms of the distortion. The former is, as we have already seen, the unrepresentability of the dream thoughts in consciousness. As it is aptly phrased by one of Freud's most brilliant sympathizers, the mind is like a city which during the day busies itself with the peaceful trends of legitimate commerce, but at night, when all the good burghers sleep soundly in their beds, out come these disreputable creatures of the psychic underworld to disport themselves in very unseemly fashion; decking themselves out in fantastic costumes, in order that they may not be recognized and apprehended.

The four mechanisms of displacement, condensation, dramatization, and secondary elaboration represent the essential relation of the manifest content to the dream thoughts of the latent content. It is, of course, a usual criticism that the extent of distortion allowed under these processes is so great that almost any ideational material could be thus interpreted in the same terms as the dream. It is not yet possible to say just how much there is in this argument, which is directed against so many phases of psychoanalytic theory. It is freely admitted that the adduced evidence is not conclusive, nor always "convincing"; such is obtainable only through personal experience with the method.

We may leave open the question of whether this process of conviction is equivalent to empirical proof. But to this argument is added another; namely, the identity between the processes of the *Traumarbeit* and those of the psychoneurotic symptoms. A number of superficially recognizable dream processes are indeed strikingly paralleled in mental disease. Take, for example, the curious word-plays and literal distortions that seemed to promise so convenient an appeal to *reductio ad absurdum*; they are familiar mechanisms in schizophrenic states.<sup>1</sup> And since we not infrequently observe dream symbolisms which we can trace with a fair degree of subjective certainty, it is not unreasonable to suppose that there are other dream symbolisms which lie beyond the range of this immediate recognition. Freud's generalizations are based upon implicit confidence in the validity of the psychoanalytic method for their interpretation, though it is but just to add that corroborative evidence from other sources is sometimes avail-

<sup>1</sup> Thus a few days since a patient tells me, among other details of a scheme for world-reorganization, that one sixth of the shoe business of Australia is to be taken away and divided equally between Salem, Massachusetts, and Elmira, New York. Salem receives its share as compensation for its relative loss of prestige to neighboring towns, as Lowell, Lawrence, Haverhill; Elmira receives its share owing to a relationship with Salem given in the three similar letters, *e*, *l*, *m*, possibly also *a*. It is also brought out that the patient has an acquaintance in the shoe business who lives in Elmira, but the selection is persistently *rationalized* on the basis of the corresponding letters. Furthermore, the bees are hostile to mankind, and sting us, because we insult them in speaking of their dwellings as *hives*, the name of a disagreeable skin affection; we should call them *homes* or rather *hones*, because bees produce honey.



able and considered.<sup>2</sup> So many briefer, and let it be said without offense,

<sup>2</sup> So far as I am aware, no one has called psychoanalytic attention to the following material as illustrative of symbolic relationship between religious beliefs and certain conceptions in natural history. The text is taken from an eleventh-century manuscript recorded in Braune's "Althochdeutsches Lesebuch" (Halle, 1897, pp. 70-72), and so far as the writer makes out its not exactly classical dialect, it runs as follows:

1. *De Leone*. Here I begin a discourse about the beasts, what they severally betoken. The lion betokens our Saviour through his strength, and thereby is often mentioned in the holy writ. Thus Jacob said, in naming his son Judas, "Judas my son is the whelp of the lion." The lion has three things about him which symbolize our Saviour. One is this: When he goes in the forest and smells the hunters, then he destroys the track with his claws so that they do not find him. Thus did our Saviour, when he was in the world among men, so that the enemy should not understand that he was the Son of God. Then when the lion sleeps, his eyes watch. But in that they are open, therein he betokens our Saviour, who himself said in the book of Song of Songs, *Ego dormio et cor meum vigilat*. That he rested in the human body and waked in the godhead. When the lion brings forth, then the little lion is dead, so she keeps it until the third day. Then the father comes and blows on it, and thus it is brought to life. So did the Almighty Father wake his only begotten Son from death on the third day.

2. *De Hydro*. In the water of the Nile is a kind of serpent which is called the hydra, and is the enemy of the crocodile. For so the hydra rolls herself in the mud, and springs into his mouth and slips into him. Then she bites his inside, until he dies, and she goes out whole. The crocodile betokens death and hell. The hydra betokens our Saviour, who took upon himself the body of mankind thereto that he overthrew our death, and vanquished hell and returned victorious.

3. *De Sirenis et Onocentauris*. In the ocean are wonderful beasts which are called sirens and onocentaur. Sirens are mermaids and are like women as far as the navel and from there up like birds, and should be very beautiful. When they see men traveling on the water, then they sing very sweetly until they are so charmed with the exquisite song that they fall asleep. When the mermaid sees that, then it goes in and destroys them. Therein it betokens the enemy, who seduces the mind of man to worldly lusts. The onocentaur is half man and half ass, and betokens them who are "ambivalent" (*zuivaltic*) in their tongues and in their hearts, and have the appearance of righteousness yet do not fulfil it in their deeds.

4. *De Hyæna*. A beast is called the hyæna, and is sometimes male and sometimes female, and therein is very unclean; such are they who first called upon Christ and then sought after the evil one. It betokens them who are not unbelieving, nor yet rightly believing. Of them said Solomon, "They who are ambivalent in their hearts are also ambivalent in their works."

5. *De Elephante*. Also is there an animal called *elevas*, that is an elephant, who has great understanding upon him, and no lust of the flesh. Thus when he wishes a child, he goes with his mate to the field, where grows the mandrake that is the child plant, so the elephant eats the plant, and his mate, and when they come together thereafter, then she conceives. And when she is to bring forth, she goes to a ditch full of water and brings forth there. . . . The elephant and his mate betoken Adam and Eve, who were innocent until they ate the fruit which God forbade them, and were free from all unclean desires. And as soon as they had eaten the fruit, they were driven forth into the misery of the

clearer presentations of them have been given in English, that it is superfluous to reproduce them here. The processes are always reflections of deep-seated and most intimate tendencies of the psychic life; we never dream innocently "or, that is, hardly ever." Let them appear as trivial, as confused, as exquisite as you will; all are likely to hark back to the repressed "imitations of immortality in early childhood":

"The trail of the serpent is over them all!"

Despite the stylistic qualities of the original, the book is not very systematically put together. It abounds in repetition, perhaps for the better, as Ernest Jones remarks, and, as has been said of other psychoanalytic writings, rambles interestingly along, more or less free association fashion. The essentials are all to be found in the last chapter, which unfortunately seems also to have given the most difficulties in translation. Various general features of the dream and its relations, as the apparent amnesia, the regression (to sensory elements), a very clever rationalization of the process of wish-fulfilment, the *Angsttraum* as the failure of the "sleep-guarding" function of the dream, are discussed through its more understandable portions.

It is interesting to note that Freud's expressions are distinctly more moderate than those of many of his followers. "No one is really qualified to use or judge Freud's psychoanalytic method," runs part of the translator's preface, "who has not thoroughly mastered his theory of the neuroses—"The Interpretation of Dreams," "Three Contributions to the Sexual Theory," "The Psychopathology of Everyday Life," and "Wit and its Relation to the Unconscious," and who has not had considerable experience in analyzing the dreams and psychopathological actions of himself and others. That there is required also a thorough training in normal and abnormal psychology goes without saying." This is at best an ungallant flight from criticism, since no one lives who has these qualifications; hyperbole that may be justified in proselytizing for a faith, but in present existence. The ditch full of water betokens that he said, "*Salvum me fac, deus.*"

6. *De Vipera*. There is a kind of snake called the viper, of her *phisiologus* relates, that when she is to become pregnant, . . . then she swallows the semen and becomes so desirous that she bites off his genitals, and he straightway lies dead. Then when the young have grown in her womb, then they bite through her and thus go out. The snakes are comparable to the Jews, who polluted themselves with unclean acts, and persecuted their father Christ, and their mother, the holy Christianity. Also God commands us in one of the gospels, that we should be as wise as these same serpents. There are three kinds of snakes; one kind, when she becomes old, her sight fades; then she fasts forty days and forty nights, and all her skin loosens, then she seeks a stone with a hole in it, slips through, scrapes the skin off and thus rejuvenates herself. Another kind there is, that when she wishes to drink, she first spits out the poison. From this worm we should take the example, that when we are to drink the spiritual water, that is given to us from the hand of our Saviour, we should first spew out the uncleanness with which we are defiled. The third kind is, when she sees the man naked, she flees from him; but if he is clothed, she attacks him. So also our father Adam, so long as he was naked in the garden of Paradise, the devil might do nothing against him.

scientific matters one is better concerned with the justice of the criticism than with the competence of the critic. One must indeed be ready to recognize different orders of validity in the sciences; we have still the right to paleontology, be its material ever so less certain than mathematics. But let us not lose sight of the fact that psychoanalysis has not carried its theories to ultimate test, but has rested its formulations on that level at which the most immediate practical applications lie. Thus a very primitive astronomical conception would "work" with all demands of practical life. The Laplacian hypothesis "works" in harmony with far more extended knowledge; well could one speak here also of its "helpfulness," and its systematic ordering of so many phenomena whose relations were hitherto unintelligible. On a still higher level we find conditions where the Laplacian hypothesis fails to work; but they are such as few people understand. Now there arise other astronomic hypotheses which endeavor to harmonize these factors, and it is only to be expected that, when it is better understood on the scientific level how and why psychoanalysis works as well as it does on the practical level, it will work there much farther and better than it did before.

As to the various personal reactions to the views set forth in this book, let it suffice to repeat a simple warning against over-rationalizing one's opinions. The logical demands one makes of a theory are very dependent on the degree to which it clashes with other conceptions that have previously developed special value for us. It is only human nature if some of the bitterest denouncers of psychoanalysis would shed their last drop of mental blood in defense of some proposition no better grounded in reality, but personally more comfortable. As it takes many kinds of people to make a practical world, so it takes many sorts of minds to make an intellectual one. He is the most fortunate who is not prevented by factors of personal affect from seeing and using what is advantageous in all.

F. L. WELLS.

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*Ecce Deus: die urchristliche Lehre des reingöttlichen Jesu.*<sup>1</sup> WILLIAM BENJAMIN SMITH. Jena: Eugen Diederichs. 1911. Pp. xvi + 316.

As the subtitle indicates, the main thesis of this book is that Jesus was originally the divinity of a Jesus-cult which existed and with great secrecy and much symbolism propagated a pure ethical monotheism, between the approximate dates of 100 B.C and A.D. 100. In a previous work ("Der vorchristliche Jesus") the author offered the same thesis and presented an argument for it based chiefly on the book of the Acts and several of the letters of the New Testament. The present treatise considers the subject from the point of view of the "stronghold of liberalism," the gospels. The discussion is directed, not against the orthodox conservative view that Jesus was and is a God-man (a view which Smith regards as unintelligible and scientifically meaningless), but against the "liberal" view of the higher critics that Jesus was simply a human teacher whom his converts and followers, in the course of a cen-

<sup>1</sup>The book was recently published in English by the Open Court Company.



tury or two, came to worship as divine and to represent as having been supernaturally conceived, as having wrought miracles, died on a cross, risen from the dead, and ascended into glory. "If the Jesus of the New Testament had been a purely human personality, who during his life made such a deep impression on his companions that, immediately after his death, they saw visions and preached with tremendous effect that he rose from the dead and rules as highest God in heaven—then such an astonishing personality would necessarily have so filled the minds and hearts, the thoughts and memories, of his disciples that their preaching and writings would have been filled with memories of this wonderful life and human nature, filled with allusions to his words and deeds, and of appeals to his authority;—but this consequence is altogether false; on the contrary, exactly the opposite is the case. Hence the antecedent is also false" (p. 26). The further we go back in the direction of the earliest representations of Jesus, the more the human elements in the Jesus-picture disappear, while the divine stands out more and more prominently, until in the original Mark we have an actual God. Not that the human elements in this picture were introduced to deceive. The original monotheism of Christianity was presented as the teaching of a divine personality simply to give the doctrine concreteness and dramatic force. It was originally expressed in "miracles" and parables in order that it might be hidden from the masses until it had won adherents enough to be able to fight successfully its battle with the prevailing polytheisms of the time. Smith's view, consequently, involves and necessitates a symbolical interpretation of the original "miracles" and of the entire human element in the Jesus-picture, excepting, of course, those passages, such as the stories of Jesus's childhood, which were interpolated later by disciples who *misunderstood* the original meanings of the text and sought to supply what *to them* seemed to be implied as to the human nature of the Christ. One of the motives of these historical and symbolic passages is the often bitter controversies between the Jews and the new cult. The fundamental tenet of the new faith was taken from the prophets of Israel and given cosmopolitan and spiritual interpretation which neither the rabbis nor the people of Israel were great enough to embrace. That new interpretation was an ethically democratic monotheism. Another motive lay in the struggles between the conservative and radical members of the Jesus-cult itself, the former seeking to keep the new doctrine concealed in symbols and pictures, while the latter wished to proclaim the cult (the kingdom of God) openly. Thus Matth. 11:12.

In a second paper, on the essence of original Christianity, emphasis is laid on the silence of the apologists as to the humanity of Jesus, and indeed as to anything in Jesus except a doctrine. Then follows a paper on the secrecy of original Christianity, in which this method is represented as a tactical necessity. The history of Jesus results from an effort to dramatize a sublimely spiritual monotheistic doctrine. Following the suggestion that the perfectly just man would be persecuted and crucified, the suggestion contained in the second book of Plato's Republic (361), Jesus is represented as crucified, and then the resurrection and

ascension naturally follow. "The enunciation of monotheism is the only significant essence that one can ascribe to Christianity. The idea that this essence consists in a sort of moral doctrine is absolutely impossible. . . . The Himalaya peaks of ethics were not reached in the New Testament. No such dizzy heights of moral construction tower up here as in the second book of Plato's Republic. . . . Christianity is not morality, it is religion, *Theosebie*, the worship of the one God" (pp. 79, 80). The true Urinhalt of Christianity was: "Fear God, and give him honor."

In an essay on "The Negative Evidence of the New Testament," the book undertakes to make it probable that the gospels (especially) present a doctrine merely and no picture of an actual human being at all. This paper contains considerable repetition, but many additional passages are interpreted symbolically. The "very old" Jesus-hymn which Smith regards as undoubtedly pre-Christian and which contains the fundamental ideas of the Jesus-picture contained in the original gospels is cited and discussed. Certainly if this hymn was possessed by a branch of pre-Christian Gnostics, the Naasenes or other, as Smith contends, it goes a long way toward justifying the main thesis here. The hymn is found in Hippolytus V., 10. In a further appendix to this paper, by way of showing that I. Corinthians is full of gnosticism, the term *ectroma* (I. Corinth. 15:8) is explained as the gnostic term for matter, what Plato and Aristotle called *hyle*.

In a paper on "Die Grundsäule des Schmiedels" we have a refutation of the nine arguments advanced by Professor Paul Wilhelm Schmiedel, of Zürich (in his article on The Gospels in the Biblical Encyclopedia), in favor of the "liberal" conception of Jesus. Then follows an article on the "Silence of Josephus and Tacitus," in which stands, "The profane literature of the period in our possession is silent as to the life, works, and death of the so-called founder of Christianity" (p. 254). The famous passages of Josephus and Tacitus referring to Christ are probably Christian interpolations, and at best they merely inform us (1) that there were so-called Christians or Chrestians in Rome in the time of Nero, and (2) that as early as about A.D. 117 the originator of the Christian cult was said to be one Christ who, three generations before, was supposed to have been crucified. No Christian writer of history or apology in early times has cited a single passage from profane literature to justify the Christian claims concerning Christ, and we may be sure that six generations of zealous and scholarly apologists would have done so had such genuine passages been available.

The paper on the "Kingdom of God and the Call to Repentance" maintains that the call to repentance in both the Old and New Testaments was simply: "Turn ye from the worship of idols to the worship of the one God." In another paper entitled, "A City Called Nazareth," the author further defends his thesis (developed in *Der vorchristliche Jesus*) that the above title simply means, "the city which for the purpose of my presentation may be called Nazareth"; that is to say, the name is an invention to explain the much older appellation Nazareth. The name was applied to Jesus and his disciples, not because of a city in which they

were supposed to live, but because they belonged to a sect of pre-Christian gnostics called Nazorenes, who worshiped Jesus and Christ as a super-human and heavenly being. The word comes from the Old Testament root N-S-R, meaning to watch or guard. Smith maintains that there probably was no city by the name of Nazareth in Galilee in the time A.D. 1-30.

The last investigation of the book has to do with the name Judas Iscariot, and finds that Judas probably means the Jewish nation, while Iscariot (probably from the Hebrew root S-K-R) means, simply, one who delivers up, transmits, or surrenders (*der Ueberlieferer*). It was the Jews who handed over the great Jesus-idea, the Jesus-cult, to the heathen.

The reviewer is not able to pass upon the validity of the arguments of these papers, and, moreover, they contain a wealth of linguistic, literary, and historical information of which no reproduction is here possible. The arguments are very suggestive, but to give a symbolical interpretation to all the historical passages in the New Testament is, as indeed the author says, at present impossible. Moreover, it may never be possible. The author maintains that one must judge as to the validity of his main thesis by the general tenor of the New Testament. For the serious lay reader this thesis can be, for the present at least, little more than a suggestive hypothesis. It would be interesting to know what another generation or two of scholars in this field of historical research will pass upon it.

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## JOURNALS AND NEW BOOKS

MIND. January, 1913. *Rationalism and Empiricism* (pp. 1-13): G. T. LADD. - Critical defense of rationalism, maintaining that the pragmatic attempt to refute rationalism must inevitably use the rationalistic method. Pragmatism is opposed to unity and synthesis, the avowed aims of philosophy. *Collective Willing and Truth* (pp. 14-47): S. ALEXANDER. - Considers goodness and truth, evil and error, in their relations to each other. Truth is coherent beliefs, and believing is speculative willing. All willing has as its object propositions. *Alchemy and the Absolute* (pp. 48-61): M. M. PATTISON MUIR. - Intellectualistic philosophies and the alchemists are alike in aim, method, and even in phraseology. "Both treat concepts as the great realities, and the realities of experience as transmutable appearances." *The Metaphysical Method of Herbart* (pp. 62-75): GEORGE H. LANGLEY. - "It is the purpose of this paper to consider the method put forward by Herbart as the instrument by which inference can be made from the common concepts of experience to such knowledge of reality as shall render a rational explanation of experience possible." *Discussions: The Nature of Sense-Data.—A Reply to Dr. Dawes Hicks*



(pp. 76-81): B. RUSSELL. *Ethics and the New Intuitionists* (pp. 82-86): HAROLD P. COOKE. *Mysticism v. Intellectualism* (pp. 87-89): F. C. S. SCHILLER. *Critical Notes*: A. Meinong, *Über Annahmen*: C. D. BROAD. F. C. S. Schiller, *Formal Logic*: R. F. A. HOERNLÉ. H. Gomperz, *Sophistik und Rhetorik*: F. C. S. SCHILLER. J. Adams, *The Evolution of Educational Theory*: JOHN EDGAR. J. Seth, *English Philosophers and Schools of Philosophy*: JAMES GIBSON. Evelyn Underhill, *Mysticism*: A. E. TAYLOR. *New Books. Philosophical Periodicals. Notes.*

ARCHIVES INTERNATIONALES DE NEUROLOGIE. April, 1913. *Quelques réflexions sur les folies jumeaux et familiales* (pp. 213-218): P. BAJENOFF. — A few interesting cases of simultaneous insanity in twins show that psychosis depends upon heredity rather than upon environment. *La méthode de Rosselime pour les examens psychopathologiques* (pp. 218-222): P. BRESLER. — Rosselime's method for the study of psychosis is analogous to the method proposed by Binet for the measurement of the intelligence in infants. *Sur les origines françaises de la balnéation continue dans le traitement des maladies mentales* (pp. 222-224): N. KOSTYLEFF. — The use of frequent and prolonged bathing in the treatment of mental diseases, recently introduced into Germany, has been in vogue in French asylums since the middle of the nineteenth century. *Revue des Sociétés. Analyses bibliographiques.*

Avalon, Arthur and Ellen. *Hymns of the Goddess*. London: Luzac and Company. 1913. Pp. ix + 179. 4s.

Schmucker, Samuel C. *The Meaning of Evolution*. New York: The Macmillan Company. 1913. Pp. 298. \$1.50.

Schwarz, H. *Der Gottesgedanke in der Geschichte der Philosophie*. Heidelberg: Carl Winters Universitätsbuchhandlung. 1913. Pp. viii + 612. 5.80 M.

Winch, W. H. *Inductive versus Deductive Methods of Teaching: An Experimental Research*. Baltimore: Warwick and York. 1913. Pp. 146. \$1.25.

## NOTES AND NEWS

### LETTER FROM PROFESSOR MECKLIN

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

The statement in the last issue of the JOURNAL to the effect that I resigned my position as professor of philosophy at Lafayette College because my teachings were thought to be contrary to the standards of the Presbyterian Church is somewhat misleading.

The issue was one of text-books and teaching methods, not of attacks upon church standards. Exception was taken by the authorities to the use of Angell's "Psychology," Dewey's and Tuft's "Ethics," and similar text-books, on the ground that the functional and genetic method employed in them is opposed to the traditions of the college and subversive of the faith

and morals of the students. No objection was raised to the use of the genetic method in other departments, such as biology and geology. In justification of my colleagues in these departments it should be said that the teaching in the department of philosophy had their thorough sympathy and support.

It is, of course, a familiar fact that the above text-books and methods are used in other Presbyterian colleges and there is little doubt that they would have passed unchallenged in Lafayette but for the fact that their implications were thought to be a menace to the particular type of Presbyterianism that at present dominates the policy of the institution. This fact should be clearly realized by the friends of higher education and by the supporters of the college. It involves a most important question, namely, whether a well-meaning, but misguided loyalty to outworn theological beliefs is to take precedence over loyalty to approved scientific methods and well-attested facts. It is, of course, evident that no institution of learning can do its best work under any such policy.

It seems that the above statement of the facts should be made in the interests of higher education and of the college, as well as for the enlightenment of my fellow-teachers of philosophy. I believe this statement will ensure their sympathy and support in the course I have taken.

Very truly yours,

JOHN M. MECKLIN.

LAFAYETTE COLLEGE,  
September 11, 1913.

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A CONFERENCE on the Binet-Simon tests was arranged by Professor Lewis M. Terman, of Stanford University, to be held at Buffalo on August 29 in connection with the Fourth International Congress of School Hygiene. The special purpose of the conference was to consider matter relating to needed revisions of the scale and to its proper use. Among those who read papers were Dr. Henry H. Goddard, Dr. Otto Bobertag, of the University of Breslau, Dr. F. Kuhlmann, Professor Josiah Morse, Professor W. H. Pyle, Dr. Charles Scott Berry, Dr. Carrie R. Squire, Dr. Grace M. Fernald, Dr. E. A. Doll, Professor J. E. W. Wallin, Professor Lewis M. Terman, and Professor G. M. Whipple.

PROFESSOR MASAHARU ANESAKI, who occupies the chair of the science of religion at the Imperial University, Tokyo, has been appointed for next year professor of Japanese literature and life at Harvard University, and will give three courses dealing with the philosophical and religious thought of Japan.

PROFESSOR EDMUND H. HOLLANDS, of Butler College, has been appointed to a professorship in the University of Kansas. He has been succeeded by Dr. E. Jordan (Chicago), who was last year instructor in philosophy in Cornell University.

DR. CHRISTIAN A. RUCKMICK, of Cornell University, has been appointed instructor in psychology in the University of Illinois.

JOHN R. TUTTLE has accepted an appointment as acting professor of philosophy and education in Elmira College.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHOD

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### REALISM VERSUS EPISTEMOLOGICAL MONISM

*"Um eine Wahrheit richtig kennen zu lernen,"* says Novalis, *"muss man sie auch polemisiert haben."* It will, therefore, I hope, be regarded as evidence merely of a desire to appreciate to the full all the truth there is in the "new realism," if I present a few remarks upon the reasonings recently published in these columns by Professor Perry, in his friendly, amusing, and vigorous reply to his critics.<sup>1</sup> So far as the reply deals with minor matters and controverts certain criticisms upon his method of procedure in his "Present Philosophical Tendencies" he ought, in fairness, I think, to have the last word. But upon the main philosophical question with which he deals, his paper seems to me to show the needfulness of some further attempt at clarification; and, in particular, to show the desirability of an attempt to establish more clearly than I seem hitherto to have succeeded in doing, what the main question and the right logical order of questions in the controversy over neo-realism are.

It is evident in his reply that Professor Perry's attention is not chiefly directed upon the side of the neo-realistic shield on which I had ventured to animadvert. His interest seems, indeed, to be so largely absorbed by one issue that he is prevented from observing that I have been mainly dealing with another, and have been urging that it is the logically prior one. The philosophy of the neo-realistic sextet—to distinguish it thus from Professor Fullerton's and other kinds of "new" realism—contains, as we have repeatedly been told by the authors of it, two equally essential doctrines, *viz.*, realism as such and "epistemological monism," the "theory of the independence" of the object of cognition and the theory of its "immanence" or "numerical identity" with the actual content of consciousness. And the second of these two theories, as we have likewise been authoritatively given to understand, is but a corollary of a still more fundamental doctrine, the "relational theory of consciousness."

<sup>1</sup> This JOURNAL, Vol. X., pages 449-463.



This last, indeed, affords a great part of the support for the "theory of independence" as well as for the "theory of immanence." The great neo-realistic discovery has professedly been a discovery about the nature and function—or functionlessness—of consciousness in cognition; the most pregnant thesis of the new philosophy, as I have elsewhere remarked, is the thesis "that consciousness is known to be the sort of thing that can not possibly be constitutive of the existence or the nature of any object." Now, this is not only the most original and most decisive element in the new realism, but also its most significant element. The contention that consciousness is a purely "external" relation, and the epistemological monism which is implied by this contention, are the things in the theory which go deepest and cut the widest swath in philosophy. Nearly all, though not quite all, that I have hitherto written on the doctrine has been concerned with this part of it, has dealt with the special question: Is a *monistic* realism possible (a) without self-contradiction, and (b) without contradiction of conceded facts and distinctions, and, in general, (c) without a denial of the possibility of perceptual error?

Now, it seems difficult to persuade Professor Perry to take a serious interest in this aspect of the doctrine which he professes. The "theory of independence" is evidently with him the more highly favored child. About realism as such, and the inadequacy of the usual arguments against it, he argues much and forcefully in his recent article; about epistemological monism he has something, but disappointingly little, to say directly. And most of the part of his paper which is a rejoinder to certain arguments of mine curiously connects those arguments with the wrong conclusion! Professor Perry, for example, observes that he sees nothing in "the argument for the subjectivity of the aberrations of sense-perception" which can determine "the comparative merits of realism and idealism." And of course, where the question concerns merely idealism and realism *überhaupt*, there isn't anything in that argument which bears upon the question. I have never imagined that there is; nor can I recall ever intimating such a thing. But there seems to me to be a very plain pertinency of that argument to the question of the merits of monistic realism. Again, Professor Perry remarks that I "for some reason" find something "inconsistent with realistic premises"<sup>2</sup> in his admission that "knowledge and the thing known" may often "possess little if any identical content." But what I had said about this admission was, as a matter of fact, that I could not "recognize in it the authentic accent of epistemological monism." In short, Perry's engrossment in the defense of realism in general is

<sup>2</sup> The passage of mine which Perry cites occurs in my review of his "Tendencies," this JOURNAL, Vol. IX., page 681.

such that he overlooks the most express insistence that one is not dealing with that part, but with the other part, of the neo-realistic scheme.

Upon this other part, however, I must try once more to fix his attention and that of any who may be interested in the general issue. I shall not, indeed, here again set forth at length the arguments which I have already repeated to weariness. But I shall make a few comments upon such passages in Professor Perry's paper as seem to bear in any way upon this matter, and shall endeavor to indicate more definitely than hitherto how this issue and that concerning realism as such seem to me to be related.

1. The principal objection which I, at least, have brought against epistemological monism when conjoined with realism, consists in the observation that there are certain classes of perceptual data—hallucinations and “secondary qualities,” for example—which we are compelled, if we would avoid absurdity, to regard as existing merely subjectively; and that, therefore, consciousness can not *as such, and in all cases*, be merely an external or “non-constitutive” relation, nor can *all* of its objects be wholly independent of it. To this mode of argument Professor Perry now makes a reply which would doubtless be fatal if it were itself well grounded. He contends, namely, that the notion of “merely subjective existence,” employed in the argument is evasive and meaningless. “So long as ‘subject’ is not itself scientifically formulated,” he declares, the notion in question serves merely as “the back yard in which the sweepings or the original disorder of experience are kept out of sight without being wholly denied. In this sense ‘merely subjective’ means ‘not yet explained.’” But I must protest that to me, and I suppose to most people, it means nothing of the sort; that, on the contrary, the expression has a perfectly definite sense, which can be sufficiently, though perhaps not exhaustively, formulated; and that Professor Perry manifestly uses the same notion constantly and could not philosophize in the lack of it. No occult and elusive metaphysical assumptions about the nature of “the subject” are essential to its definition. Any thing or quality or relation is said to exist “merely subjectively,” or “in appearance only,” when it exists at any given time in the “consciousness-relation” with respect to one or to some limited number of conscious centers (or organisms, if Professor Perry prefers the word), and does not at that time exist outside of that particular relation or independently of it. In the case of those things which appear in consciousness as having extension and the qualities of physical objects, the negative part of this definition can be put more concretely. Such things are said to exist merely subjectively, if they do not exist in the one space common to the generality of per-

ipients at the points at which they appear as existing, and if they do not belong to the dynamic system of physical nature. All the elements of this definition are the common currency of neo-realistic speech and thought. These writers distinguish the "consciousness-relation" from other relations, and therefore presumably mean something definite by it; they recognize that things are in that relation always with reference to individual organisms or minds; and they regard "independence" as a definite and positive predicate, and therefore should be capable of understanding what one means by saying that certain things or relations are *not* independent of the consciousness-relation. It can not, then, be on the ground that the very notion of "merely subjective existence" is to them unintelligible, that neo-realists can disregard the difficulties inherent in their epistemological monism. They may argue that the ascription of this kind of existence lacks proof, or even—reversing the short and easy method of the Berkeleian idealist—that it is intrinsically insusceptible of proof; but they are not entitled to say that they can not imagine what their critics are talking about.

2. But do they, as a school, maintain that nothing which can be said to exist can depend essentially upon consciousness? Is the assertion that "consciousness is an external relation" meant to apply to all cases, or only to some cases, of even cognitive consciousness? I can not refrain from raising once more the complaint that this peculiarly well-organized philosophic party has failed to make this point clear in its platform. No one can read "The New Realism" with this question in mind without being convinced that the question has not in all cases been fairly faced, and that, so far as it has been faced, different members of the group give opposing answers to it. Now, to speak frankly, I can not think it exemplary procedure, on the part of any school of philosophers, that they should announce as the fundamental tenet of their common creed a proposition, concerning which it subsequently transpires that they are not clear, or at least have no common understanding, as to whether it is a universal or a particular proposition.

Professor Perry's personal view, however, seems scarcely mistakable. Alike in his "Present Tendencies," in "The New Realism" and in his recent paper, he makes it evident that he does not accept the relational theory of consciousness as a universal proposition.<sup>3</sup> He enumerates a number of elements of our experience which "depend upon consciousness." He admits that "images may be used by the mind as substitutes for certain other things which they are said to 'mean'"<sup>4</sup>—which is to say that images are not in all of

<sup>3</sup> Cf. the writer's remarks on this point in *Science*, N. S., XXXVII., page 868.

<sup>4</sup> This JOURNAL, Vol. X., page 458, note.



their content and relations identical with any simultaneously existing independent object. Even of normal perception he apparently maintains only that "when an entity is object of consciousness it enters into a new relation of which *certain* other relations, *sufficient to determine it*, are independent,"<sup>5</sup>—not, be it observed, *all* its other relations. Thus Professor Perry seems to hold a monistic view of cognition only with respect to some part of the content of consciousness, and even of perception.

Such being his attitude towards the central doctrine of the school to which he professes to belong, I should like to put certain questions concerning the implications of that attitude. It would conduce, I am sure, to a better understanding at least of Professor Perry's personal version of neo-realism, if he would consent to answer these questions explicitly.

i. Is not the difference between one who takes this position and one who—like Professor Pitkin, for example,—declares that *nothing* can ever be in the slightest degree dependent upon consciousness, a very wide and fundamental philosophical difference?<sup>6</sup>

ii. If some of the things which present themselves in "the consciousness-relation" are "dependent on consciousness," by what criterion are we to determine just which are and which are not so dependent? Let it be remarked that it is no proper answer to this question to say vaguely that the criterion is empirical. What we need to know is the *kind* of empirical test which we are to rely upon, and how in specific instances it is to be applied.

iii. What *positive* proofs of *physical* realism (as distinct from proofs of the inconclusiveness of the subjectivist arguments) does the neo-realist use when he gives up the argument for independence which was based upon the supposed generic incapacity of consciousness to be constitutive of anything?

iv. Why, if much of our experience is dependent upon consciousness, may not errors, hallucinations, and the secondary qualities of matter be so dependent? Why should a realist who does not hold the relational theory of consciousness as a universal proposition defend the paradox of the objectivity of the illusory, which was originally simply a troublesome consequence of that theory?

3. Though Professor Perry seems, as we have seen, to adopt epistemological dualism, and to abandon the external-relation theory of consciousness, with respect to a large part of our cognitive experience—and though he also seems to offer no good reason for pausing

<sup>5</sup> *Op. cit.*, page 463; italics mine.

<sup>6</sup> Not that Pitkin consistently adheres to this (*cf. Philos. Rev.*, XXII., page 421). An undeviating epistemological monism is to be found in none of the new realists.

on this path at just the point where he does pause—yet in one passage he presents very briefly an argument which apparently purports to be a refutation of dualism as such. Ordinarily, as he remarks, “secondary qualities have been explained in terms of a relation between a physical environment and a reacting sentient organism”; and this explanation has given rise to the dualism—which Professor Perry strangely calls “the epiphenomenalism”—of popular science, the view that “over and above the organism and the environment there is a series of entities that are a function of a specific relation of organism and environment.”<sup>7</sup> But this dualistic realism is untenable. The objections to it Professor Perry finds it “scarcely necessary to rehearse”; yet he reminds us of “the essential point,” viz., that the dualistic theory “fails to account for knowledge by construing it as a depository of states effected by an outer physical cause which *ex hypothesi* can not itself be known.” In rejecting dualism on this ground, neo-realism is confessedly borrowing a point from “idealism”; both the latter doctrines “are attempts to provide for an immediate knowledge of reality, by identifying reality with objects before the mind.” Concerning the use of this argument against epistemological dualism by the neo-realist three remarks seem to me pertinent.

(a) Professor Perry does not, of course, state quite justly the position of either popular or philosophical dualism, when he represents it as holding that the outer object which produces its psychic counterpart “can not itself be known.” The word “known” in such a context is question-begging. The dualist has always declared that the existence and some of the attributes or relations of the object *can* be known, but only mediately. His characteristic thesis, in short, is that there is such a thing as mediate yet valid knowledge, and that all cognition of objective or independent realities must be of this sort. There are, he maintains, always two entities involved in any genuinely cognitive situation: the “*content* of the knowing experience” (to use Professor Strong’s terminology),<sup>8</sup> and the “*object*” of that experience. But though these two are by hypothesis existentially distinct, they are related in a peculiar manner; and the possibility of this relation is grounded in a peculiarity of the first factor, or “*content*.” Primarily, indeed, and from what may be called the point of view of an outside observer of the situation, the relation between the two entities is simply one of partial correspondence or, at the least, of practical adjustment of content to object. The correspondence may, as dualism has been wont to admit ever since Descartes’s time, be very imperfect. There is, says Professor

<sup>7</sup> *Op. cit.*, page 460; italics mine.

<sup>8</sup> “Substitutionalism” in “*Essays in Honor of William James*,” page 172.

Strong, "a large element of misrepresentation and mere symbolism" on the side of "content"; "the knowing experience may vary markedly from its prototype in richness of detail, in the cast of its qualities, and even in more fundamental ways" without forfeiting its cognitive pretensions, "so long as it calls forth the right reaction." But what the dualist in the first instance asserts is merely that this duplicity of existence accompanied by partial qualitative correspondence, or by functional correlation, is a fact. If, however, you go on to ask him how he can know it to be a fact—since the *knowing* of the relation of content to object must itself lie wholly on the side of content—he will answer by pointing out the peculiarity of the knowing experience. It is, namely,—as he declares—able to include *within* content a "reference" to that which is outside and independent of content; it is capable, in short, of meaning something by the predicate "independent existence"; and it is further capable of finding within the limits of content reasons, either probative or probable, for attaching that predicate to some of the other elements of content, and for thus "projecting" these outside itself. By virtue of this peculiarity of thought, then, the dualist concludes, the external object can be in some measure "known" without being "immediately" given.

(b) Such being the essentials of the dualistic view, one must suppose that it is against this view that Professor Perry intends to direct the objection already cited. When he says that the dualist's external object "can not be known," he must be understood to mean, not that the dualist admits this, but that he ought to admit it, that this is a necessary, though unacknowledged, implication of his doctrine. But why should the unknowableness of the real object be held to be an implication of dualism, in view of the reasoning just given, whereby the dualist repudiates this implication? Professor Perry can charge dualism with the difficulty which he imputes to it, only if he rejects the principle which all philosophical adherents of that view regard as rendering the difficulty nugatory—the principle, namely, that there may be a valid mediate knowledge of objects, that the "content" of cognition may "stand for" something not itself and even attest the externality of that something. But in fact, so far from rejecting this principle, Professor Perry has repeatedly affirmed it, and in his recent paper he seems even to treat it as axiomatic: "no philosopher," he thinks, "has been so hardy as to deny that signs, words, symbols, and even images may be used by the mind as substitutes for certain other things which they are said to 'mean.'"<sup>9</sup> If "used" here is to be understood to signify "legitimately used for cognitive purposes," then the proposition which

<sup>9</sup> *Op. cit.*, page 458, note.



Professor Perry supposes nobody to have denied is a proposition which robs his objection to dualism of all force. If by means of an "image," I can know of the existence and something of the nature of a thing which is not that image, which is different from it in the time or place or manner of its existence; or again, if "inmediate knowledge or discursive thought" there are, as we are told in "Present Philosophical Tendencies," cases "in which the knowledge and the thing known possess little if any identical content," and yet the knowledge in such cases is genuine and objective; then the only argument which Professor Perry brings against dualism is nullified by his own admissions. If a real mediate knowledge of any single thing whatever is conceded to be possible—for example, a knowledge of my own past experiences, or a general truth arrived at only through inference—then it is conceded that the knowing experience possesses precisely the peculiarity with which the dualist credits it—the capacity to find within the limits of "content" "references" to something existentially, and in part qualitatively, distinct from that content, and a power, or even a compulsion, to regard that something as an existent not less actual than the content itself. But—to repeat the essential point—if the knowing experience has this peculiar potency, it can not be assumed that, in order "to account for knowledge" at all, we must "provide for an *immediate* knowledge of reality, by identifying reality with objects [directly] before the mind."

(c) It is, however, a sound instinct for the implications of his "theory of independence" that has led Professor Perry into this admission of the possibility of valid mediate knowledge, and thereby into a contradiction of his own argument against epistemological dualism. For the truth is that any realist, new or old, if he is to make out his case at all, absolutely requires just that assumption about the self-transcending reference of the cognitive experience which we have seen to be the fundamental principle of dualism. He requires it just as much for his theory about perception as for his theory about discursive thought. For he is committed, *e. g.*, to the assertion that the perceptual object which is at a given moment in the consciousness-relation—"immediately before the mind," the neo-realist would say—is yet independent of that relation, that it can remain the same object without being thus related to my or any other organism. But this independence can not, of course, be a purely potential independence, never factually realized. There must, in other words, be times when a given object is not merely *capable* of existing outside the consciousness-relation, but is, in fact, so existent. And the neo-realist, like any other realist, in affirming that objects can be *known* so to exist, necessarily implies that from

a datum immediately before the mind he can obtain knowledge about something not immediately before the mind; that the existent which is *now* in consciousness "means" or refers to things or times not present; and that therefore it is in no way needful that a thing and its relations should be immediately present in consciousness, should be "numerically identical" with a percept, in order that its existence and relations may be truly known. And this is a direct denial, not indeed of epistemological monism in itself, but of the only reason for adopting epistemological monism which Professor Perry mentions.

It appears, therefore, that when the new realism borrowed from "idealism" the dialectic by which it seeks to confute the dualistic type of realism, it borrowed an edge-tool which it is incapable of handling without self-destruction. The considerations—the undeniably plausible considerations—which make for epistemological monism can not logically stop short of thoroughgoing subjectivism; and by that I mean not only solipsism, but "the solipsism of the specious present." For those considerations reduce simply to the assumption that only the immediate can be known, that only the existences which are actually—and not by any duplicate or surrogate—in consciousness can be apprehended by means of consciousness. It is necessary that this premise be denied by all those who would repudiate the conclusions which its acceptance renders ineluctable.

Let me, then, by way of bringing the latter part of this discussion to a focus, put certain further questions before Professor Perry.

v. Does not the "essential point" which he urges against epistemological dualism involve the assumption that only the immediate can be known?

vi. Is this assumption reconcilable with his admissions concerning the possibility of mediate knowledge? Is it not, in any case, inconsistent with the realistic "theory of independence"?

vii. Has the neo-realist any other reason for rejecting the dualistic form of realism?

4. From the objections brought against the new realism on the score of the paradoxes involved in its objectification of errors, hallucinations, and the like, Professor Perry makes no direct attempt, such as Holt, McGilvary, Montague, and Pitkin have made, to relieve the doctrine; but he does reply to this type of criticism with a *tu quoque*. Idealism, he declares, is no better off here than realism. "The same problem arises either on idealistic or realistic premises." The answers to the question concerning the relation of "the illusory experience to the object as defined by science," are not "any clearer on a pan-idealistic than on a pan-subjectivistic basis." Indeed, the new realists as a school have at least the merit of having grappled

with these problems, even if their grapplings be not regarded as successful; they have attempted "constructive thinking" in these "regions where idealism has simply defaulted." On all this several comments suggest themselves.

(a) In the last-quoted remark, Professor Perry has surely forgotten either history or the dictionary. To "default" is not to fail to succeed; it is to fail to attempt. And there is certainly no paucity of attempts to deal with the problem of error in the writings of idealists. On the contrary, other neo-realists have accused idealists of an excessive preoccupation with this problem; and it is notoriously the generating problem of a great part of historic idealism. Many of the proposed idealistic solutions may be bad solutions, as I think they are. But our neo-realists are scarcely in a position to reproach others on this score. They have taken up the problem somewhat belatedly, after critics had pointed out that it is the touchstone for their entire doctrine; and their "attempts at constructive thinking" upon it have not, I believe, been found by the philosophic world overpoweringly convincing.

(b) That these attempts are as yet successful, Professor Perry noticeably refrains from asserting. Yet it is conceded in "The New Realism" that "the first and most urgent problem for the new realist" is to reconcile with his "theory of immanence" the "apparently hopeless disagreement of the world as presented in immediate experience with the true or corrected system of objects in whose reality we believe." Of the present situation of neo-realism with respect to this crucial difficulty Professor Perry seems to find nothing better to say than that it is certainly no worse than the situation of idealism—which last he evidently regards as hopeless. Now, the *tu quoque* has seldom been deemed by the more austere logicians a really cogent form of defensive argument. It is a little hard, therefore, to understand the serene confidence with which Professor Perry continues to affirm a doctrine of which he appears unprepared to maintain that it has thus far solved a problem upon the solution of which its tenability depends. Can it be that neo-realists have never heard of that mode of "selective nervous response of an organism" which is known as suspension of judgment? It is, I grant, a mental state which is unduly rare among philosophers generally.

(c) Is it, however, true that the objections based upon errors, illusions, and the like, bear as much against idealism as against the new realism? Professor Perry's reason for thinking so, I gather, consists in the reflection that "pan-objectivism" and "pan-idealism" are both forms of epistemological monism and must therefore be equally subject to any difficulties which are alleged to be due to the monistic hypothesis as such. Here seems to be at least a recognition



of the real issue. And the reply would be fatal to idealism, if idealism necessarily *were* a form of epistemological monism. But no idealism of which I have ever spoken favorably is of such a sort. The pure-bred subjectivist, or idealist with the markings of epistemological monism, is the rarest of birds in the philosophic aviary; few indeed of the historic doctrines which bear the idealistic name have been of this type. What is commonly called idealism—but might better be called spiritualism, if that word had not been diverted to baser uses—is a kind of epistemological dualism, or, to use a less familiar, but less equivocal term, of mediatism. It rejects *physical* realism, but it does not deny the existence of entities external to, and independent of, any given moment of cognitive consciousness, or any series of such moments in the experience of any individual conscious center.<sup>10</sup> It is a very trite remark that even Berkeley's metaphysics is in principle realistic.

Now, to either form of epistemological mediatism—the idealistic or the realistic—there is obviously open a way of defining the nature of errors and illusions which is barred to both the realistic and the idealistic form of epistemological monism. To the mediatist error of all sorts consists in the appearance in the consciousness of individual minds, at particular moments, of content which can not, upon reflection, be assigned to the objective order, or at least to the particular parts of that order to which it appears as belonging. As to what this objective order is, the two classes of dualists differ; to the pluralistic idealist, for example, its content is determined by its logical congruency with itself and its empirical congruency with the related experiences of all minds; to the dualistic physical realist, it consists in a residual realm of material things-in-themselves which are what they are independently of all minds. But this difference is another story; in spite of it, the accounts of error given by both theories are generically the same. But the epistemological monist maintains either that all things are equally subjective or that all are equally objective. In either case, he has no means of defining the difference between actual content of consciousness that is merely subjective, and that which is objective; he is debarred from making a distinction between appearance and reality. The new realist, more specifically, holding that consciousness in general is an external relation, in, for, and by means of which alone no content whatever can exist, necessarily denies that any content can exist in dependence on, and exclusively inside of, any *particular* consciousness. Thus he is unable to make use of that natural view about the essence of per-

<sup>10</sup> These distinctions were made, though as *obiter dicta* rather than formally, in my review of "Present Philosophical Tendencies"; cf. pages 674, 677. Professor Perry seems to have overlooked them.

ceptual or other error which dualistic realism and idealism share with common sense.

The first question to settle, then, if the discussion of neo-realism is to make any orderly progress, is the question of the tenability of the relational theory of consciousness and the consequent epistemological monism. This theory is no doubt sufficiently unfavorable to idealism; for it describes consciousness as a virtually otiose thing in the universe, and endeavors to reduce the notion of it to as near nullity as possible. But to realism the theory is absolutely deadly. For the only plausible argument for epistemological monism is, as we have seen, purely subjectivistic in its premises; and the conjunction of such monism *with* realism entails all those contradictory consequences which have now so often been pointed out, and implies that perceptual error is impossible. When this issue is disposed of, the ulterior controversy between physical realism and idealism can be profitably taken up.

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## PROFESSOR MONTAGUE AS "NEO-REALIST" ON ERROR

IN two ways the problem of error affords a test of "neo-realism." (1) The occurrence of errors seems to contradict the alleged objectivity of the mind's contents in cognition, or the "realism of common sense." "So the first and most urgent problem for the new realists is to amend the realism of common sense in such wise as to make it compatible with the facts of relativity. For this reason especial attention has been given in the present volume to a discussion of those special phenomena, such as illusion and error, which are supposed to . . . set going a train of thought that can not be stopped short of subjectivism."<sup>1</sup> "As the departure from realism was due to the subjectivistic interpretation of error, so the return to realism must be based upon a realistic interpretation of error" (p. 252). In other words, a solution of the problem seems to be required as part of the foundation of the new realism. (2) Even if, however, this were not the case, the fertility of the doctrine as an instrument of research would still be well tested by its success or failure in dealing with this problem, or with any specific objective problem. "Neo-realism" would scarcely be entitled to the degree of respect which its advocates claim for it, if it did not enable us to investigate the world better than its opponents can do. One might admit the "externality" of the cognitive relation, and other planks in the plat-

<sup>1</sup>"The New Realism," pages 10-11.

form; but if that admission did not at least remove a hindrance to discovery in particular problems, the doctrine would be after all only an epistemological one. And the realists evidently mean it to be more than that. They speak of "exhibiting that critique [new realism] as a basis for the solution of special philosophical problems" (p. 1); they also say that "The escape from subjectivism and the formulation of an alternative that shall be both remedial and positively fruitful, constitutes the central preeminent issue for any realistic protagonist" (p. 10). In estimating the merits of the new "reform" we may, then, raise either of two questions: (a) is its platform proved correct, consistently with the fact of error? and (b) is its platform significant and important as helping to settle particular problems and among them this one of the nature of error? However mutually involved these two questions are, they are for the critic two distinct modes of approach to the realistic position.

For those whose main interest lies in objective information, rather than epistemology, the second mode of approach is the more fitting one. It is rather typical of modern philosophical discussion that the critics of realism have hardly even considered it; the controversy has hitherto been almost wholly epistemological. We shall then consider the realistic attack on this particular problem of error and the directly involved one of consciousness, in so far as realism claims to throw a clearer light on these problems than idealism can do. The last three essays in the above-mentioned volume do claim this, and hence are the first actual performance, so to speak, of realistic work; the preceding essays being programme and methodology. It is solely the success of that work in treating an old philosophic sore that we wish here to judge. And it seems to the present writer that it is by just such a concrete test that the new doctrine would desire to be judged.

It is, perhaps, unfortunate that no other objective studies have yet been furnished. The problems of error and consciousness seem, to many, to be firmly intertwined with epistemology; and the lack of any results (so far as we recall) which are obviously free from such taint raises the suspicion of a continued interest in that unworthy study. The suspicion may, however, be lulled when we read that "the problem of contradiction (error) has nothing whatsoever to do with the problem of knowledge or epistemology" (p. 363). At any rate, we have no actual work done but this, with which to test the new platform. And this is the more regrettable, as it is just here that we find disagreement creeping in. We are given two, if not three, distinct and apparently clashing definitions of error and consciousness. It does not look favorable to a proposed reform, when the only positive results it offers are various and conflicting. But



we must guard against injustice: there may be real progress toward scientific certainty even through the disagreements. And in any case, we do not yet know what new information realism may in future vouchsafe, in regard to other specific problems such as time, life, intensity, probability, causation, etc.

It behooves us, then, to examine the definitions proffered of error and consciousness. We shall focus the discussion upon the problem of error, neglecting that of consciousness except in so far as necessary to the solution of the former. This is fairer than it seems to be, because "the most serious difference" of opinion (p. 481) lies in the definition of consciousness, and we may well defer criticism on that topic until the differences become less serious. As regards error, we select the essay of Professor Montague for analysis, because it presents the fundamental issues so simply and clearly as best to reveal the essential difficulties of the problem. Moreover, it forms a convenient *πov στῶ* from which to approach the decidedly different view of Professor Holt. The definition of Professor Pitkin, "thick" and suggestive though it is, seems so condensed that we may profitably suspend judgment until it is further elaborated.

Montague begins his account with a provisional definition of the object (error) to be investigated: "the true and the false are respectively the real and the unreal, considered as objects of a possible belief or judgment" (p. 252). "Real" and "unreal" are then described. "... the real universe consists of the space-time system of existents, together with all that is presupposed by that system" (p. 255). All objects, real and unreal, are designated by the term "subsistent." "I shall use the term 'subsistent' to denominate *any one of the actual and possible objects of thought*" (p. 253). Unreal, accordingly, is "the remainder of the realm of subsistent objects" (p. 255). There are then unreal subsistents. Does not this deny the statement that the realist "accords full ontological status to the things of thought as well as to the things of sense, to logical entities as well as physical entities, or to subsistents as well as existents" (p. 35)? However, it is not so much an inconsistency of terminology that concerns us here, as the question of utility. Why not simply say, there are unreal objects (or, if you like, neuter objects, too)? To bring in the rather new term "subsistent" would be justified if the term were a fertile one, revealing some attribute of use in the discussion. Now the only use of the "subsistent" here is to be a receptacle for errors; which so far throws no light\_whatever on the nature of error. Hence the advantage of the preliminary definition is not to the present writer apparent. This is of course a rather small point: we mention it because there seems a real danger for

"neo-realism," in being led (by its admiration for his mathematical work?) to adopt some of Mr. Russell's terms without inquiring into their applicability or usefulness in non-mathematical fields.

It appears that those unreal terms or propositions called errors are closely connected with minds. To understand the former, then, we must ask what consciousness is. And first, a futile issue in regard to its reality is removed by our author. To define it is not to annihilate it. It may, perhaps, be defined as a certain type of organic behavior, as real potentiality, as transverse projection, or a cross-section of the objective world; but in any case it remains both real and *sui generis*. The combination of terms and relations which constitutes it is a unique kind of combination, not found in non-conscious things. Montague then rightly condemns "psychophobia" as a "hatred of consciousness and a determination to drive it out of the world of real existence" (p. 269). It may be that he himself goes farther in the opposite direction than a "neo-realist" should go, when he says "my awareness of objects" is "more certainly real than anything else" (p. 269) and "the general impression that we can be more certain of our own thoughts and feelings than of anything else would seem to be well founded" (p. 290). But at any rate the reality of consciousness is clear enough. The only issue is concerning *what* it is. And here we come to the main positive contention of the essay on which the answer to the problem of error turns: the definition of consciousness as potentiality.

The definition is introduced in a neat, elegant manner as the solvent of an antinomy between mind and matter. Each claims the primacy, because each can be defined in terms of the other. As allowing the partial truth of each claim, the exposition is kinder to the subjectivist logic than realism usually is, and, in the opinion of the present critic, juster. Yet it is not with the breadth and fairness of Montague's treatment that we must now occupy ourselves, much as we may admire them. Nor do we deny the truth of his view that "potentiality" solves the antinomy and truly describes consciousness. It is only with the adequacy of his definition to account for the facts of consciousness and of error that we shall deal.

Let us get the definition before us. "... consciousness . . . is the condition by which objects at a distance from one another in space or time or both may be in some sense 'present to' or 'in' or 'together with' one another" (p. 276). This actual presence, in some sense, of the remote, shows consciousness to be more than just material existence or process. "Consciousness is the potential or implicative presence of a thing at a space or time in which that thing is not actually present" (p. 281). These terms are here used in a particular sense, to be sure. "I must ask the favor of being allowed

to continue to use (as an equivalent of the cognitive function) the word 'implication' in the artificially narrow sense in which it applies to the cause-effect relation, and the word 'potentiality' in an artificially broadened sense to denote the backward reference of an event to its cause as well as the forward reference of a cause to its effects" (p. 283). It may be, however, that as Pitkin suggests (p. 485), implication is not the correct word to use here; so we shall—as Montague himself in fact usually does—use mainly the term "potentiality." This category may be unfashionable in many philosophical circles to-day; but it is a favorite with Thomists and is in good scientific usage<sup>2</sup> and, therefore, should be respected by "neo-realists" at least. Consciousness is then real in the sense that it is the actual presence of what is, from a non-conscious or physical point of view, only potentially present: its reality and its essence consist in just that relation of potentiality.

The term "potentiality," as used by Montague, contains, I think, an ambiguity; and this ambiguity is what enables it, at first sight, to guarantee the actual existence of the subjective as an anchor to which errors may be attached. It may be used as quite relative to the future or implied object, or it may be taken to mean something now actual, as concrete present term. The former is the usage, it seems, of science; the latter is Montague's usage of it in his definition of consciousness. For he does regard the psychical as actual. "The potentiality of the physical is the actuality of the psychical" (p. 281). "Then causal potentiality would have been made actual or real . . ." (p. 279). Now this already adds the quality of existence to the attribute of potentiality as used in science. So when he says in his definition, "Suppose that this cause-effect potentiality . . . were in itself and actually . . . Consciousness . . ." (p. 279), he should really be understood as saying "Suppose that this cause-effect potentiality as in itself *actual* were . . . Consciousness. . . ." This attribute of consciousness, by virtue of which actuality is vouchsafed to what is, physically speaking, not actual, remains undefined and mysterious.

The definition thus seems to the present writer true as far as it goes, but unable to account for that actuality which its author ascribes to subjectivity. It must then be accused of infertility. As it does not explain the existence of subjectivity, it can not explain the specific properties of minds. Memory, expectation, distant perception, as present actual states, are not explained; they are taken as part of the basis of the definition (p. 276). The explanation of the narrowness of attention, and of belief (pp. 292-294) depends not on the concept of potentiality, but upon the facts of brain-physiology.

<sup>2</sup> See Poynting and Thomson's "Heat," 4th ed., London: 1911. Page 110.



The hylopsychism defended (pp. 283–285) seems to go too far; we are not shown a warrant for attributing to inorganic nature such actualized potentiality as alone suffices to constitute consciousness. But our more particular concern is to show that the actual occurrence of error is not explained.

The application to error is certainly very pretty. A potentiality or tendency may or may not be fulfilled. That depends on the contingency that other and counteracting tendencies may intervene. The ball tends to fall, but will not do so if sustained by a string. Hence the destiny of any potentiality is ambiguous. The implicate, or potential object, of a brain-event is a “multiple value,” to use Pitkin’s term. The fact of the plurality of causes shows that one brain-event is due to many objective sources; that of the plurality of effects shows that organic responses may or may not be successful. “. . . when . . . the cerebral implicate . . . happens not to have been the actual cause, or happens not to exist, then we shall have apprehension of what is unreal, which is false knowledge, or *error*” (p. 287). We may note, by the way, the resemblance of this view to the idealistic one. The latter traces error to abstractness or incompleteness of information. On Montague’s view it is the potentiality of one, or some, tendencies *considered merely by themselves*, which is ambiguous as to fulfilment. If the brain-event were such as to render *all* the implicates, with their intensities and incompatibilities, present to consciousness, there would presumably be no errors. But consciousness is selective, so that the few implicates that rise above its “threshold” are liable to eventual destruction. This similarity to idealism’s view, however, is hardly an objection: it is rather a confirmation. If such opponents agree, there is some ground for suspecting that they may both be correct.

Does the view of Montague, however, account for the actual *occurrence* of errors? Their possibility it does, I think, explain. But the real difficulty of the problem lies in their actuality. There would be no problem at all, indeed, if unrealities did not actually somehow appear to be realities. Now the mere fact of ambiguity does not account for such appearance as a present fact of consciousness. Just as the concept of potentiality does not explain how the potential comes to be in some way an actually present fact, so the concept of ambiguous potentiality does not explain how any one of the “multiple values” or implicates comes to be actually present and believed in consciousness. The very erroneousness of error consists in such actual presence to, and acceptance by, consciousness. Grant already the existence of consciousness, and *then* we can no doubt explain why one implicate rather than another occupies attention and compels belief. But ambiguous potentiality can not of itself do what

"*eindeutig*" potentiality fails to accomplish, *i. e.*, can not account for the actual occurrence of deception in consciousness. Many points no more constitute a line than does one point.

There is still more serious difficulty. We do not think Montague has succeeded in defining a distinct subjective realm, wherein errors may be anchored, but suppose we admit that "neo-realists" can consistently believe in an actual field of subjectivity, and thus can meet the current objection, that they have no place for error. Even then the crux of the problem is not reached. The source of embarrassment is independent of the subjective-objective issue. This statement may be the less surprising, as Holt, at least, among the new realists would seem to agree with it,<sup>3</sup> and, among their critics, Cohen.<sup>4</sup>

Suppose I am, by hypnotism or otherwise, deluded into believing that there is an elephant on my desk. This is erroneous *only* because it *contradicts* the objective fact that there is no elephant there. It is not that what is in my mind is other than, or distinct from, what is outside it, but that they contradict each other. Common sense, with its customary short-sightedness in deeper matters, thinks to resolve the conflict by separating the antagonists; it puts them into different fields, the subjective and the objective. Their enmity does not thereby cease. The desk which has an elephant on it may be put into my mind, and the desk which has none, into the physical world, but they are one and the same desk, and that desk is endowed with two attributes which deny each other. The fission of the world into two parts, subjective and objective, simply gives us a world in which the two parts contradict each other; whereas if all is objective, or all subjective, we have a world which, in errors, contradicts itself. There seems to the present writer to be a clear dilemma. (a) If the subjective is actual as such, then its attributes and contents are so and must not surreptitiously be painted over with a tint of unreality. The erroneous judgment is actual, not only as an event, but also in its contents. Distinct though these two aspects of it are, that gives no ground for ascribing unreality to the latter rather than the former. How could an actual event be constituted by unreal elements? But if all in the subjective field is actual, then the elephant on my desk is so. But he is not. (b) If, on the other hand, the subjective is replaced by something else, *e. g.*, the "subsistent," the logic of the situation is unchanged. No matter what we *call* the field of error, it contradicts the objective facts. Montague seems, in spite of his defense of actual consciousness, occasionally to take this

<sup>3</sup> Quotation above made from page 363.

<sup>4</sup> This JOURNAL, Vol. X., page 211.

second horn, as when he speaks of the "unreal or merely subjective" (p. 297), and Holt seems explicitly and consistently to do so. The real problem of error appears to be, how can the contradiction in any sense be? To account for error by the subjective, or subsistent, or any mode of partitioning the universe is, after all, no better than the old explanation of God's permission of evil by resort to a personal Devil.

The vanity of appealing to the subjective is, I think, felt by Holt, who frankly states that error is objective contradiction. "All errors are cases of contradiction or contrariety" (p. 361). To this view Montague's is not entirely unrelated, inasmuch as error is made possible for the latter by the combat of conflicting potentialities; yet Montague does, I believe, think to throw light on the situation by describing it in subjective terms—which Holt avoids. As for the objective view of Holt, it does seem, after all, to reduce the problem to an *impasse*. This I believe to be quite just, as the problem seems to me at present unsolved for idealism and realism alike. Errors are entities (whether you call them existent or subsistent or real) which are present in the world, and by all the rules of logic they have as little right to be so as evil in a universe made by God. We may even call them unreal, but it is none the less difficult to understand how unreal things can be. This criticism, of course, leaves untouched Holt's admirable empirical investigation of consciousness, which, if it had been due to the adoption of the realistic platform, would be the best possible testimony of the platform's fertility. Unfortunately it does not appear to be dependent upon realism. Holt says: "I hold this view of secondary qualities as densities, solely because of its empirical (and not its realistic) value" (p. 355, footnote). But as regards error, we seem to be none the less left with contradiction on our hands: which is not far from the old skepticism.

As far as the problem of error goes, "neo-realism" has not yet, I think, justified its claims as a "reform." Neither a subjective nor an objective interpretation has made the occurrence of errors intelligible. In fact, the whole issue between subjectivism and realism would seem to be indifferent to this problem. Whether all the world is defined in subjective terms, or objective terms, or now one and now the other, seems indifferent to the solution of the contradiction which error presents to each view. The specially realistic part of realism, then, is irrelevant to the problem. Whether or not it is irrelevant to other positive problems such as life, causation, etc., remains to be seen. We can judge better when we have a unanimous and settled "neo-realistic" definition of consciousness, of life, and other such categories. Meanwhile we owe these three writers a debt of grati-



tude for a great deal of detailed information on the attributes of consciousness, whether the information is due to their realism or not.

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### COMPARATIVE PSYCHOLOGY: A QUESTION OF DEFINITIONS<sup>1</sup>

ACCIDENTALLY, rather than by the deliberate intent of any psychologist or group of psychologists, the term comparative psychology has come to mean the study of mind in organisms other than man. The writer wishes to urge against this usage the fact that the adjective comparative refers rather to the method of a science than to its materials. Witness comparative anatomy, embryology, pathology, physiology. The comparative anatomist is quite as much concerned with the structure of man as with that of the ape, or frog, or sea-urchin.

It seems wholly desirable, therefore, that we discard the present usage of comparative psychology and employ the term to designate the study of consciousness, behavior, or the products of behavior—no matter what the type of organism concerned—by the method of comparison. From the standpoint of this definition no special group of psychological facts is more amenable to comparison than another. In fact, comparative psychology studies alike, for the purpose of obtaining detailed genetic descriptions, the facts of the psychology of man in the various stages of development and degrees of normality; of other animals; of plants; of minor social groups, peoples, and races.

May we not with profit modify our usage of genetic, animal, and comparative psychology in accordance with the following suggestions? In spite of the fact that man is an animal, we may feel justified in contrasting the psychology of man with the psychology of animals. But surely it is preferable to be explicit whenever possible by referring to the genus or species of organism studied. Thus, to be consistent, we should speak of the psychology of ape, of dog, of elephant, of whale, or of octopus, as we speak of that of man. Similarly, although we may conveniently use the term plant psychology—or better the psychology of plants—whenever knowledge justifies it, we should designate the type studied.

As for genetic psychology, no such special branch, division, or department of the science really exists. All psychologists are—or

<sup>1</sup> Being Contributions from the Psychopathic Hospital, Boston, Massachusetts, 1913.24 (*Bibliographical Note*: The previous P. H. Contribution, 1913.23, by Robert M. Yerkes, entitled "Comparative Psychology in Relation to Medicine," was submitted to *Boston Medical and Surgical Journal*, July 14, 1913).

should be—interested in the history of mind in the individual and in the race,—interested in genetic description. As it happens, this particular kind of description is obtained more readily and satisfactorily through the application of the comparative method than otherwise. It seems fair to say that the individual who is interested primarily in genetic descriptions of mental life should be considered a comparative psychologist.

Finally, although comparative psychology in its completeness necessarily deals with the materials of the psychology of infant, child, adult, whether the being be human or infra-human; of animal or plant—of normal and abnormal individuals; of social groups and of civilizations, there is no reason why specialists in the use of the comparative method should not be distinguished, and, if it seems necessary, labeled. Thus, the worker whose special interest is the genetic description of early development might be known as an ontogenetic psychologist, in contrast with the phylogenetic, whose chief interest is the racial history of mind. We should have also patho-psychologists and ethnic psychologists just as we have, on the basis of another kind of interest, physiological psychologists.

This note on definitions is written with the hope that it may help to carry into oblivion the use of comparative psychology as synonymous with “animal psychology,” and bring about the substitution of the natural, logical usage which the terms comparative and psychology, when linked, suggest.

It is the practise of the writer, but he does not wish to urge this upon his fellow-psychologists, to designate as the psychology of the self the purely self-observational knowledge of mind; to reserve the term psychology for the general science—introspective and inspective—and to think and speak of comparative psychology as though it were inclusive of the behavioristic materials and methods, as well as of those of the older introspective psychology.

The general science of psychology is obviously taking into itself and attempting to assimilate the methods as well as the results of students of behavior. This is natural enough and wholly desirable if the physiologist does not care to claim his own within the realm of behavior. The opposite tendency or attempt, namely, that of the student of behavior,<sup>2</sup> to borrow the term psychology for his special field of science, seems to the writer wholly unjustifiable, for the reason that if we throw overboard, as Professor Watson does, the method of self-observation, together with everything that has been claimed to be distinctive of the psychologist's point of view and purpose, we should consider the science merely a fragment of physiology and

<sup>2</sup> Watson, John B., “Psychology as the Behaviorist Views It,” *Psychol. Review*, 1913, 20: 158.

should frankly recognize and designate it as such. The writer believes that the same human behavior may be studied with profit, and to very different ends, by the physiologist or behaviorist and by the psychologist.

ROBERT M. YERKES.

## REVIEWS AND ABSTRACTS OF LITERATURE

*Man a Machine.* JULIAN OFFRAY DE LA METTRIE. French-English: including Frederick the Great's "Eulogy" on La Mettrie, and extracts from La Mettrie's "The Natural History of the Soul." Philosophical and Historical Notes by Gertrude Carman Bussey. Chicago: The Open Court Publishing Company. 1912.

La Mettrie's "*L'Homme Machine*" was published in 1748 at Leyden, whither its author had fled from France after the publication of his "*Histoire Naturelle de l'Ame*." The appearance of "*L'Homme Machine*" brought Holland's hospitality to an end, and La Mettrie found refuge at Berlin as "court atheist" to Frederick the Great. "*L'Homme Machine*," one of the early products of the French Illumination, not only shocked the orthodox, but became the target for the shafts of the *illuminati*, condemned by those who were ready to adopt its ideas. Succeeding generations have been content to read it chiefly by title, and have therefore misconceived its thesis as a sort of crude automatism.

A true appreciation of the significance of "*Man a Machine*" is, of course, prejudiced by the title and a very natural misunderstanding of the connotation of *machine* in the eighteenth century. To-day machine is defined primarily as any instrument employed to transmit force or to modify its application: any apparatus for applying mechanical power. Other usages are regarded as figurative or analogical. In truth this definition is the result of a long process of specialization, which was itself the effect of the science of mechanics and a new age of machinery. In the seventeenth and eighteenth centuries machine was employed to designate any sort of device: a ship, a carriage, a pulpit, a bandbox, and not infrequently for the human body, even by the poets. Hamlet subscribed himself to Ophelia: "Thine evermore, most dear lady, while this machine is to him," and Wordsworth sang of his wife,

"And now I see with eye serene  
The very pulse of the machine."

Quite similar was the French usage of the period. For La Mettrie the human machine or mechanism was not a thing of wheels and levers, still less of atom pounding on atom. He antedated both stereo-chemistry and the kinetic theory of heat. His materialism is a materialism which begins with *organized* matter. He is a biological philosopher.

La Mettrie was a physician, a pupil and disciple of the celebrated Boerhaave. He insists that the physician is the only one who is competent through observation and experience to speak with authority on the



nature of man and the human mind: only the physician is competent to be a philosopher. Such an attitude is the reflection of a new scientific situation, just as the mathematical method of philosophizing in the seventeenth century was the natural result of great discoveries in physical science. The researches of Leeuwenhoek and Swammerdam in anatomy and embryology made possible by the aid of the new art of microscopy, together with the investigations of a multitude of other observers in the field of natural history, had provided the foundations for an independent science of biology. Already the time was ripe for such system-builders as Buffon and Linnæus. Here was the basis for a materialism radically different from any that could be constructed on the speculations of Democritus or the mathematico-mechanical discoveries of the preceding century. To La Mettrie must be attributed the credit of being the first to apply the new science to the problems of mind; of being the first to present a thoroughgoing biological philosophy of man.

He marshals a long array of facts to demonstrate the continuity of the whole world of life. (It should be remembered that he is also author of "*L'Homme Plante*.") He cites such facts as the development of the embryo, the process of regeneration, the continued vital activity of organs, and even of small sections of organs, after being removed from the bodies of both lower and higher animals to prove that organized matter *as such* has in itself the principle of sense and motion, for the explanation of which it had been deemed necessary to postulate a soul. Sensitivity is a property of the structure of all animals and even of plants (*cf.* the tropism of Loeb), and between sensitivity and thought, La Mettrie insists, there is no break. "To be a machine, to feel, to think, to know how to distinguish good from bad as well as blue from yellow, in a word, to be born with an intelligence and a sure moral instinct, and to be but an animal, are characters which are no more contradictory than to be a parrot or an ape, and to be able to give oneself pleasure." Man, to be sure, has an organization more complex and more plastic than that of any other animal. He has language and education, without which he would be little better than the ape. La Mettrie was impressed by the marvelous success of Amman in teaching deaf-mutes to read lips and to speak, thereby transforming into men those who were imbeciles and virtual animals. He saw no reason why apes, by a similar process, could not be endowed with "souls." To demonstrate that mind is only an activity of body he not only adduces such facts as the effects of drugs, diseases, and all sorts of bodily processes and physical conditions on the mind, but refers to various forms of aphasia—this in 1748! We have here something decidedly different from an application to man of Descartes's theory of animal automatism which many historians of philosophy have presented as La Mettrie's thesis.

The Open Court Publishing Company has rendered a valuable service in making easily available to English readers this classical work of La Mettrie. Unfortunately the amateurish work of the editor leaves much to be desired. With the exception of some historical notes, avowedly condensed from encyclopedias, it is of little value. There is not a hint of

the significance of La Mettrie as a biological philosopher. The appendix and notes contain merely a dialectical comparison of the materialism of the author with such theories as those of Descartes, Hobbes, and Holbach. It is an attempt of the blind to lead the blind. The book would be more valuable with nothing but the text.

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*The Training of Children.* JOHN WIRT DINSMORE. New York: American Book Company. 1912. Pp. 336.

Mr. Dinsmore's object in writing this book is "to prepare for country and village teachers a work in the development and training of the mind that would contain the essential facts of psychology so plainly and simply expressed that any person might grasp their meaning without too frequent appeal to the dictionary. . . . It is intended to furnish sound instruction based upon well-known and fundamental truths to those who are engaged in training children either in the home or in the common school." The book is written in two parts, the first part dealing with children prior to school age and the second with school life. It treats of such topics as proper clothing, colds, corporal punishment, the time for telling stories, forms of worship, the nature of evil, etc., as well as psychological facts such as the physiological basis of mental activity, the laws of memory, the development of perception, will, etc.

The book is a mixture of psychology, common sense observation of children, and moral platitudes. The style is poor and the selection and arrangement of topics leaves much to be desired. The reviewer is doubtful of the soundness of some of the instruction afforded when such statements as the following appear: "The chief aims of training the perceptive faculties are *Keeness of Observation, Accuracy of Inspection, Clear Definitions, and Wholesome Ambitions.*" "If we read a description of a flower or of a sunset, we must be able to form a mental picture of the one or the other, else the description will mean nothing to us." "The child sees a light and tries to grasp it; if he succeeds it burns him. The next time he will avoid it. This is his reasoning: 'The light hurt me when I touched it; this is a light, therefore it will hurt me if I touch it; I will not touch it.'" "Children should be fully instructed as to the evil effects that are certain to follow the indulgence of anger, hatred, revenge, and all evil passions." Despite its defects the book is written with an earnestness of purpose that attracts attention. The practical suggestions offered for the training of children may prove of service to those who have had no experience in the work.

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### JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. April, 1913.  
*Introspection in Dementia Precox* (pp. 145-170): EDWIN G. BORING. - Victims of dementia precox can give introspective evidence of the general

trend of their consciousness. They were found more suggestible, shifted their attention, but, on the whole, gave evidence as reliable as normal observers who are untrained, ignorant, and have a poor command of language. *Experiments on Color Saturation* (pp. 171-179): L. R. GEISSLER. — The preliminary report of an unfinished experiment on sensitivity to color saturation. Age and experience showed no influence. Sex differences were found. The liminal sensitivity is different for different colors. *On the Inheritance of Rhythm* (pp. 180-203): P. F. SWINDLE. — Rhythm seems to be acquired rather than inherited. The structure of our bodies is influential in the supposed instinctive rhythms. In the development of the sense of rhythm the skeletal muscles play the most important rôle. *Kinesthesia and the Intelligent Will* (pp. 204-253): GEORGE VAN NESS DEARBORN. — An experimental research which indicates that skill consists in fusion of extrinsic motor ideas and a certain intrinsic control which is largely inhibitory in nature. The author cites additional material which supports his view. *Bibliography. Magical Factors in the First Development of Human Labor* (pp. 254-261): FELIX KRUEGER. — Primitive people labor less in the sense in which we use the word, but much of their activity is taken up with ritualistic performances. These performances develop those psychological attitudes that make labor and later accomplishments possible. *Minor Studies from the Psychological Laboratory of Stanford University. Size and distance of projection of an after image on the field of the closed eyes* (pp. 262-266): FRANK ANGELL and W. T. ROOT, JR. *Minor Studies from the Psychological Laboratory of Vassar College. The effect of verbal suggestion on judgments of the affective value of colors* (pp. 267-269): INEZ POWELSON and M. F. WASHBURN. *Discussion. Professor Dodge's Recent Discussion of Mental Work* (pp. 270-274): F. M. URBAN. *Book Reviews. F. M. Urban, Die Praxis der Konstanzmethode und Hilftabellen für die Konstanzmethode*: SAMUEL W. FERNBERGER. Francis Aveling, *The Consciousness of the Universal*: S. C. FISHER. N. K. Toropoff, *Conditioned Reflexes Excited by Visual Stimuli in the Dog Following Extirpation of the Occipital Lobes*: A. J. ROSANOFF. E. W. Scripture, *Stuttering and Lispering*. B. Hart, *The Psychology of Insanity*. Von J. Mourly Vold, *Ueber den Traum: experimentell-psychologische Untersuchungen*. A. Busse, *Aristoteles über die Seele*. H. Hoffding, *A Brief History of Modern Philosophy*. Par G. Bonnet, *Precis d'autosuggestion volontaire: education pratique de la volonté*. F. Krueger, *Mitbewegungen beim Singen, Sprechen und Horen*. W. E. Kellicott, *The Social Direction of Human Evolution: an Outline of the Science of Eugenics*. A. Moll, *The Sexual Life of the Child*. E. Boutroux, *Historical Studies in Philosophy*. G. S. Fullerton, *The World We Live In, or Philosophy and Life in the Light of Modern Thought*. W. T. Marvin, *A First Book in Metaphysics*. C. A. Mercier, *Conduct and Its Disorders Biologically Considered*. J. H. Breasted, *Development of Religion and Thought in Ancient Egypt*. Lt.-Colonel J. Shakespear, *The Lushei Kuki Clans*. H. A. McMichael, *The Tribes of Northern and Central Kordofan*. C. A. Herter, *Biological Aspects of Human Problems*. O. Klemm, *Geschichte der Psychologie*. M. Dessoir, *Outlines of the History of Psy-*



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## NOTES AND NEWS

## LETTER FROM PROFESSOR SHELDON

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

The subject of discussion for the next meeting of the American Philosophical Association is, I believe, to be "The Problem of the Relation of Existence and Value, etc." Four members of the Committee which proposed this subject have suggested that the discussion concern itself with a certain group of questions formulated by them under five headings.<sup>1</sup> Against this formulation I have some objections to offer. The first question reads "Is Value (1) something which is ultimate and which attaches itself to 'things' independently of consciousness . . . or (2) it is a characteristic which a thing gets by its relation to the consciousness of an organic being . . . ?" This contains two distinct issues. First is that of ultimacy *versus* definability in terms of some other category, such as existence, tendency, or other ontological concept. This is an objective problem and of great interest, but it is quite other than the second issue, of the dependence or independence of value upon consciousness. The latter is simply an epistemological problem. It raises that same type of question with which, I am sorry to say, the Association has for some years past busied itself. I think there is a considerable, perhaps an increasing, number of philosophers among us, who feel that it is *not* of great importance whether reality is subjective or objective, but that it *is* of surpassing interest to know what is the structure of reality. So, too, in regard to value: what *is* it, what are *the specific* fundamental values, and is there evidence that the universe is tending to realize any of them? The ardent young "neo-realist" is avowedly interested in this sort of question; and there are, I think, many others who do not go with him in condemning "internal relations" or refuting (?) subjectivism, who are, nevertheless, quite as desirous as he of information about the characters of things. Let the epistemological problem, then, be replaced by the following task: to collect a list of cases that are generally acknowledged as values—industrial, artistic, scientific, practical, etc.,—and thence to derive a positive concrete definition of value. Surely this must be the first requisite for an investigation of the philosophic significance of *any* category; yet I find no such thing mentioned under the five headings. Perhaps, however, English and German traditions still have so strong a hold that we can not get away from epistemology; but even if that is the case, it seems foolish to discuss the subjectivity or objectivity of value before we are agreed upon what value is.

As to the other four points in the Committee's formulation, I think No. 2 is really the question of ultimacy over again. It reads: ". . . may . . . a theory of the nature of things be successfully developed without reference to a theory of values, and *vice versa*?" Nos. 3 and 4 seem to me

<sup>1</sup> This JOURNAL, Vol. X., page 168.

unintelligible. No. 5, I believe to be an important problem, whose solution would give us real information concerning the structure and behavior of the universe as a whole.

In short, I propose that we should amend the proposed formulation by inserting at the head, to emphasize its importance, the problem of definition, and by dropping the second problem under No. 1, and the whole of Nos. 2, 3, and 4, the problems to be discussed would then be stated thus:

(1) How should value be defined? (The answer to be based inductively upon analysis of a list of generally acknowledged specific cases of value 5).

(2) Upon the basis of this definition, is the concept found to be unique, irreducible, ultimate, or can it be reduced to terms of other categories?

(3) "Is there one fundamental standard of values, or is there more than one?" (first half of the Committee's No. 5).

These are specific questions in which we all have a deep interest on their own account; their solution makes a vast difference to our religious and scientific ideals; and they admit of definite evidence on one side or the other. Certainly they will suffice to occupy the full energies of any meeting. Their brevity, too, seems to me a merit. Let us not have too many questions, too many subdivisions, too much organization of things beforehand, lest, like some of the devotees of "efficiency," we have little else.

W. H. SHELDON.

HANOVER, N. H.

At the last session of the Legislature of Pennsylvania an appropriation of \$40,000 was made to aid in the development of courses in education at the University of Pennsylvania. Dr. Frank P. Graves, of the Ohio State University, has been appointed professor of the history of education, and Dr. Harlan Updegraff, of the Iowa State University, professor of educational administration. Professor A. Duncan Yocum, who now occupies the chair of pedagogy at the University of Pennsylvania, will continue as professor of educational research and practise.

At the University of Minnesota, Henry M. Sheffer, Ph.D. (Harvard), has been appointed instructor in philosophy, and Albert N. Gilbertson, Ph.D. (Clark), instructor in psychology, the latter to supply the place of Professor J. B. Miner, now on leave of absence in Europe. Assistant Professor David F. Swenson has been promoted to an associate professorship in philosophy.

In the review of Freud's "The Interpretation of Dreams" in the last issue of this JOURNAL (p. 554, line 6), the words "imitations of immortality in early childhood" should read "imitations of immorality in early childhood."

Professor John M. Mecklin, who recently resigned the chair of mental and moral philosophy at Lafayette College, has been appointed head of the department of philosophy at the University of Pittsburgh.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### DR. FULLER, PLOTINUS, AND THE NATURE OF EVIL

THE age of Plotinus was in many ways the opposite of our own. In the last days of antiquity the only great enterprises open to men were spiritual and internal to the soul. Not that the philosophers would have been unwilling to make themselves comfortable in the world and to govern it (as the conservatives would like to do now) in the spirit of their inherited polity and religion; but the ruffians, christened and unchristened, had got out of hand and would not let them. To the ruffians, accordingly, they sadly abandoned the world, and turned to chastening their unused passions and pondering on supernatural things: for if there was a "general loss of nerve,"<sup>1</sup> there was no loss of intellectual fire. The tide of metaphysical religion was then rising which is ebbing now, and earth-loving Christians of to-day are naturally out of sympathy with the rapt consolations of those last earth-spurning pagans. Moreover, the works of Plotinus, though often eloquent, are ill-arranged, difficult, and not translated into English. Nevertheless, his philosophy remains profoundly interesting and worthy of study. Ebbing tides have a way of rising again, so that it is useful to measure them; and besides, Plotinus, though a pagan, was one of the first masters of what may be called the philosophy of Christendom, and he explored ideal regions to which some minds in all ages love to soar.

Dr. B. A. G. Fuller's little book<sup>2</sup> will help many a person to come to closer quarters with the Alexandrian sage. The style of it is facile—too facile, perhaps—the question chiefly treated is full of living interest, and the passages quoted are given in the text, as well as in a readable translation. It is evident, however, that Mr. Fuller

<sup>1</sup> See the preface to Professor Gilbert Murray's "Four Stages of Greek Religion."

<sup>2</sup> "The Problem of Evil in Plotinus," B. A. G. Fuller, sometime (and now again) instructor in philosophy at Harvard University. Cambridge (England), at the University Press, 1912.

has here brought together two distinct subjects of study which he first approached separately and perhaps not with equal interest. One subject is the nature of evil and the impossibility of an absolute optimism: the other is the philosophy of Plotinus. Mr. Fuller treats the first theme in a very lucid, abstract, modern way which is certainly trenchant and perhaps sound; he approaches it argumentatively, under fire of rival academic tenets, not, it is plain, under the stress of evil itself. He maintains that the theory of evil is on the horns of a dilemma between naturalism and mysticism. We may choose to be naturalists; but then we must hold, he thinks, that all kinds of good are equal and incommensurable, anything perfect after its kind being as perfect as anything else can be. No hierarchy of goods will be admissible in which one good should be better than another in kind. Every one should be perfectly satisfied with his own nature and be incapable of regarding any different endowment as more desirable. Mr. Fuller views this naturalistic ideal with some enthusiasm. Could it be realized every one would be a god, perfect after his kind, without the least suspicion of envy of any other being, and the welkin would ring with a chorus of universal self-satisfaction.

After all, this is not so fantastic a proposal; men faithfully carry it out in considering all other animals, even winged ones, hopelessly inferior to themselves, and thinking no God worthy of the name who should not be endowed with a human consciousness and with human principles of justice and economy. Even special tribes of men have their specific ideals; I know of no nation, and hardly of a province, that does not think itself the best in the world. "I was born in Aragon," runs a Spanish ditty, "because such was the will of God; still, if I had had my choice, I should have been born in Aragon." Could a Bostonian feel differently? And who has not been struck by the weary contempt our radical friends express for any heaven that should not call for reform? The naturalist in ethics should give his blessing impartially to all such homespun ideals, although, I should say, only on two conditions: first, that these ideals be radically sincere and adequate to the actual nature and capacities of the creatures that accept them (as most conventional and religious ideals are not); and, second, that, in natural philosophy, every one should admit the similar vital status and internal authority of all the ideals in competition. This last requirement, which sounds so preternaturally liberal, is also often fulfilled in practise. Animals are not blamed for their instincts, even if inconvenient to us, but rather admired; and this occurs precisely in so far as the irrelevance of their nature to the human is realized imaginatively. Animals do not speak; they do not compel us to rehearse in words sentiments

abhorrent to our nature and habits. Therefore, they do not exasperate us or rouse in us that fanatical impulse to persecute which expresses our deep and just desire to be uncontradicted and at peace within ourselves. Had animals spoken, the Inquisition would have had a pretty work on its hands.

If this ethical naturalism offends us, with its democracy of disparate ideals, Mr. Fuller will allow us no refuge except in ethical mysticism. Every good except the highest must then be imperfect in our sight; evil will be identical with finitude, and the hierarchy of ascending goods will be simply a series of diminishing evils. The stages of natural happiness will become so many stages of spiritual misery. Virtue will be the consciousness of sin, sin the original condition of life and existence. Paradoxical as it may seem, we shall be optimists notwithstanding; for it will be clear to us that evil is an epithet blindly used, and that the consciousness of sin and unworthiness is merely a needful illusion, whatever we call evil being in itself a modicum of good and an integrating element in the greatest good possible. Our optimism, as Mr. Bradley once candidly put it, will consist in maintaining that "the world is the best possible world, and everything in it is a necessary evil."

Such is the alternative before which Mr. Fuller's analysis places us—and his analysis is very incisive: either all excellences are absolute and incomparable, or there is no excellence but one. Before resigning myself to this choice, however, I should like to consider one or two circumstances that may affect the question. Why, for instance, do actual naturalists so seldom remark this parity and independence among various perfections, which Mr. Fuller's ideal naturalist proclaims so loudly? We have just seen that almost every one thinks his chosen type of perfection alone good, or by far the best. Does not the reason lie in this, that the parity among ideals is in truth a natural parity only, a parity in a field beneath or beyond all moral comparison? Moral comparisons are possible only in view of each ideal, and after some ideal has been virtually set up. The living dispositions by which various ideals are determined are pre-moral; they can not be said to be equal morally because they are biological facts only, without any moral status at all. The values which may be assigned to them eventually are assigned by some one of them, already in operation, in proportion as they are useful, congenial, or stimulating to its own expression. Hence each nature ordinarily pronounces itself to be good, but imperfect, since it stumbles and creaks as it goes, and it pronounces other natures to be good or bad by turns and in various degrees, according to their kinship or cooperation with itself.

This naturalism in respect to ethics is not itself an ethical sys-



tem; it is no pronouncement on the better and the worse. It is a biological and historical doctrine, a part of naturalism in general. What it asserts is that moral distinctions are natural, that they arise and vary with the endeavors and interests of living beings. The various ideals and types of perfection themselves, if a vital interest finds them propitious or antipathetic, are qualified and graded morally in view of that interest; and they could not otherwise be judged at all. Truly, as Mr. Fuller says, among various perfections one is as perfect as another, and a perfect glove is as truly perfect as a perfect family: but I, being a naturalist, do not feel compelled to assert in consequence that a perfect family is not the greater good. Perfections may be differently prized, though each be as perfect as every other, because various sorts of perfect objects are not of equal consequence to a given animal nor in a given ideal. So when Mr. Benedetto Croce tells us that all expressions, if successful, are equally perfect works of art, and that a perfect Neapolitan sigh is esthetically equal to the *Iliad*, I should be far from wishing to contradict him; only I should feel that the esthetic quality so defined was interesting to esthetes only, and that man must continue to value and to compare works of art on far more humane and complex principles. Just because goods are relative to living interests, each interest may establish a hierarchy among the several goods it recognizes, according to the depth and force of its need for them. Various kinds of good are incommensurable only when the living interests that posit them are wholly disparate. Thus, it might be impossible to compare the intrinsic value of a perfect gnat with that of a perfect elephant or the intrinsic value of mere love with that of mere knowledge; yet the gnat and the elephant, love and knowledge, might perfectly well have comparable and unequal values for the interests and in the environment of a third party; and they might even be inwardly subordinated in the imagination of some god capable of sympathizing perfectly with both and of weaving these distinct experiences together.

This privilege, native to every creature, of arranging different perfections imagined by it in a scale of ascending values, relieves the naturalist of the charge of indifference and anarchy in morals; for the naturalist has a nature of his own, and if he learns to know himself, he will have a clear and dogmatic system of ethics. The same circumstance relieves Plotinus of the charge Mr. Fuller brings against him of confusing kinds with degrees of perfection; for Plotinus conceived that the universe was but a single living creature, with no wholly disparate interests existing in it, since all things had been created by the magic of a single good, and by nature converged upon it, though at various removes; so that the respective perfections of all these stages were thoroughly relevant to one another, and defi-

nately subordinated in the life and meaning of the whole. It was as if in a written sentence we urged that the perfection of each letter was incomparable with that of each word, and not a stage towards it, and so, again, of each word in respect to the perfection of the sense and syntax. Not that these kinds of perfection ought to merge or pass into one another, so that the letters should cease to be letters or the words words; yet if in truth, as Plotinus fancied, the sense of the whole alone had operated to produce those elements, it would follow that in their several spheres their perfections had different degrees of importance and of affinity to the perfection of the whole. Extrinsicly all would be collated and ordered serially in the cosmic life, and internally each higher stage would contain and project out of itself the nature of the lower, as our meanings seem to precipitate our words, and our words to determine and, as it were, to emit their letters.

No doubt this view of nature is wrong and reverses the actual order of genesis, in which grunts and gurglings come first and meanings, such as they are, float through the mind later—for the consciousness of them is fluid and evanescent—carried and alone fixed by their sensuous vehicle; but the contrary mythical view is the one proper to rhetoricians and idealists, and it is not for us to throw stones at Plotinus for not piercing an illusion which was fundamental in his nation and in his school, and to which most of us are still subject. Mr. Fuller is one of the honorable exceptions; he perceives that protoplasm is susceptible of development in alternative as well as in progressive ways; that moralities, like arts and languages, radiate from a common center, but diverge, the most elaborate being the farthest apart; and that life is essentially centrifugal, multiple, and variable in its ideals. Some ethical profusion appears in the civilizations known to us, and in each man, before he has learned the needful renunciations; but if we allow our fancy to range over the unknown parts of the universe, the natural heterogeneity of the good becomes simply overpowering. Furthermore the types of good, extensible indefinitely at the periphery, are always subtly changing at the core. Human nature is not altogether fixed, and human goodness and what man can look upon as good vary with it. Plotinus, in supposing that the good was single and *a priori*, in fancying it to be the creative power, encouraged himself to ignore the greater part of its possible forms. He shut himself up, with his sect, in imaginative intolerance. And incidentally he missed the true explanation of the origin of evil, which lies in the natural conflict of many powers and many ideals. This error, though grave and dangerous, is intelligible in a mere moralist become a metaphysician (as all Platonists are) because it obeys the suasion of the moral life itself. In each

man, as in the world at large, there is actually some variety of ideals. Each feels himself called upon to pursue the satisfaction of diverse faculties and opposed passions. But this moral multifariousness, when he reflects, becomes his peculiar torment, his bad conscience. Reason requires him to assume integrity, if he has it not. He is biologically but a single being, an indivisible engine, and he can not work in two directions at once without disrupting his life and rendering himself incapable of any perfect achievement. Harmony, unity of direction, thus become his necessary method. The better man he is, the more strictly he imposes it on his wayward impulses. Now let ill luck compel such a moral man, such a legislator over himself and plotter of inward policy, to become a natural philosopher. Will he not inevitably say that the secret of the world is a morality like his own? Will he not instinctively make a legislator of God and a single city out of the cosmos, and a moral symbol even of the landscape? His Socratic wisdom in life will become his Platonic folly in science.

Mr. Fuller's only consistent mystic, like his only consistent naturalist, is also rather an idol of the class-room than a type found in history, and I can not much blame Plotinus if his spectrum was not confined to ultra-violet rays. To believe that the life of God is best, even to aspire to rest wholly in it, if all other resting-places fail, hardly requires us to assert that in itself everything not God is evil. What falls short of the supreme may not be a sufficing good for a soul insatiable and touched with divinity; but every soul need not be of that temper, and even one that is may consistently delight in the various images and echoes of the Beloved which it finds in created things. Ought a mystic to lament that he was ever so far separated from God as to be able to love him? Be that as it may, such actual mystics as Plotinus and St. Francis (whom Mr. Fuller once or twice compares with him in an interesting way) were not kept from hatred of finitude merely by an inconsistency; they were kept from it by their first principles; they were kept from it by the very springs of their devotion, by the tenderness and wonder which filled them in the presence of the creation. The Christian in his whole being, and the Neo-Platonist in all but the whole of it, was permeated by humility. To be separated, to be inferior, to have always before and above him something not himself that he could adore, was essential to his nature and even to his celestial happiness. The beatific vision was still dualistic; it was a contemplation, a reception of influence, an ecstasy of wonder and love. Of course the life of God was in itself better than that of the saint, and the humility of the saint implied that he recognized that fact; but his humility prevented him at the same time from desiring that that fact should be otherwise. The mere existence



of finitude and separation was accordingly no evil but a good, although this good was inferior to that other good in the imitation or worship of which it arose. Mr. Fuller's ideal mystic would not be a pious enthusiast at all, but a sort of self-torturing Lucifer, unwilling not to be God. He would be like an artist cursing his works because they could not be identical with their model. Such a passion is intelligible but misguided; like that of Pygmalion, it is surely not the only consistent expression of an artistic temperament.

If we turn now to Mr. Fuller's other principal theme, the actual philosophy of Plotinus, we can not help feeling that to pose that dilemma between an abstract naturalist and an abstract mystic was not the happiest way of approaching it. Plotinus, Mr. Fuller himself says, "denied the dilemma" (p. 319); and yet he adds that it "is the key to a proper understanding of his treatment of his problem" (p. 329). Is this likely? The problem that preoccupied Plotinus and his age was not how to explain the existence of evil or how to justify the ways of God; it was rather to rise above evil, to decipher a divine image in the worn and degraded lineaments of things, and to save the soul from a temporal and sensuous life to which evil was native. I know that Mr. Fuller can quote many a phrase that seems to countenance now the one now the other of his two ultimate alternatives. Plotinus was a learned, respectable man, almost a professor; he addressed a sophisticated, over-literary public; and the training of ancient rhetoricians, which has descended to Christian preachers, encouraged the use of miscellaneous arguments and maxims, no matter what philosophy they might imply, if only they had an edifying sound or could serve to rebuke some pernicious adversary. Plotinus was not above this eclecticism in the detail of his controversies, but it would be doing him a great injustice to suppose that he was eclectic in his general thought or that his small pilferings from the Stoics and from others impeded the vigorous flight of his heart and imagination towards their congenial goal. The Neo-Platonists tended to regard as orthodox all philosophers who accepted Homer, much as the Hindus regarded as orthodox all systems that accepted the Vedas, however different they might be technically; only the atheists, *i. e.*, the Epicureans and the Christians, were tabooed. Everything else with a national and noble stamp was swept in; but the current that engulfed it all was impetuous and single enough. It made unmistakably for salvation.

The first impulse of men in the presence of evil is to resist and try to abolish it; but when evil is seen to be ineradicable in the world, their next impulse is to elude it in their own persons, so recasting their habits as to be strengthened against it and to lay up their chief treasures beyond its reach. This was the universal effort of the later

Greek moralists and of Plotinus among them. He had no courage for such a legislative vision as that of Plato's Republic; but the chastening lessons of the Gorgias, the Phædo, and the Phædrus were deeply graven in his heart. If he ever spoke of civic bonds and the beauty of the body, or of the world, it was only by rote, because the classical Hellenic tradition required it. His spontaneous ideal was to quit the body and the state and the cosmos, leaving behind all martial passions and sensuous images, to find bliss beyond them, in union with what created beings might borrow, but could not keep, of divine beauty and peace.

This is the mystic experience which, when expressed in a cosmic allegory, yields the Plotinian system of emanation. The transcendence of aspiration, divining the ideal behind the actual, becomes, when reversed in a myth, an emanation of the actual from the ideal. Hence the values of the terms remain what they had been in the original experience. The sensible is truly good, for it was deeply loved; it is a true image and hint of the ideal, since it revealed it; but at the same time it is inadequate, since to rest in it was impossible and the love which it unlocked overflowed it. The manifestation is never good intransitively and as only significant of its own being; it has become a sacramental vehicle of grace. At the same time the deity signified is proved to be good and gracious, since he is what the enthusiast beholds and is enraptured by in his image. I know that in practise a devotion that passes from individuals to the ideal is seldom an honest devotion. Platonic love has the reputation of being either frigid or hypocritical, or perhaps both at once; when it really exists, it is commonly only a sort of abstract sensuality or estheticism, at once selfish and visionary. Yet in its origin, and in the experience of the few in whom it is a spontaneous religion, Platonic love is precisely the opposite of all that. It is a passion for individuals so intense, so arresting, so disproportionate to their poor human merits, that it seems and is the revelation of an essence greater than theirs, of something that, could we live always in its presence, would render us supremely happy. A touch of this transcendence is present in all romantic passion; for the sluices of the soul are opened, and a flood of potential joy is let loose which overflows the narrow channel of any particular friendship. It is this extreme sensitiveness to what instinctively charms, this piercing shaft of natural beauty, that drives the genuine Platonist from the individual to the ideal, from an exceeding love of things that must prove inadequate to the thought of something adequate that would justify that love. So that if there is anything morbid in Platonic love, it is not its unnatural coldness, but its disproportionate fervor, not the barren egoism of it, but its suicidal self-surrender; for the Platonic lover loves so reli-

giously that his love must needs carry him beyond its initial object, and beyond himself.

When we view the system of Plotinus from this side, which is the genuine side of it, can we urge that in consistency everything not the supreme good should have been pronounced an evil? Has the lovely creature we first fell in love with become an evil, because that frail charm may have awakened and bound us to higher loyalties? To transcend an affection in this way is not to destroy but to understand it. The all-transcending aspiration of Plotinus, in leaving the earth and the stars and the intellect behind, did not need to dishonor these instruments of grace; on the contrary, in feeling them to be instruments of grace, it could add a divine sanction to their native allurements, as if a bridegroom became the priest at his own wedding. Platonism is a Hellenism transfigured by Socratic faith, a paganism in which the twelve cosmic gods have found a master, the good, and become its twelve apostles.

So much in justification of the sentiment of Plotinus that nature is good, although the supernatural is better. When we come to his occasional apologies not for finite goods but for positive evils, his arguments are as lame and the principle of them as immoral as in other theodicies: and here I can only utter a loud Amen to all Mr. Fuller's criticisms. The trick (whoever invented it) of calling finite good "metaphysical evil" was devilish in its guile; for as we can easily show that this sort of "evil" is good, and the prerequisite of all moral discrimination, we may thereby so confuse and disarm our conscience as to entertain the notion that true evils, too, might be good. But they are not. In thwarting or injuring any determinate creature (an absolute point of origin for values) they are bad irretrievably. No doubt the same material object or event which is bad for one man may be good for another, as is the issue of a battle; but that does not make it good in itself, nor good altogether, nor better for the man it destroys; nor can this man find it good while he retains his vital strength and his native shade of humanity. Pantheism, in teaching that the world ought to be full of horrors, since so it is, accepts the most savage of ideals; yet it is often embraced by the most tender-minded people, to spare themselves the distress of admitting that anything is horrible after all. Plotinus, however, was no pantheist, and his God, who created the world by a virtue that flowed, as it were, from the hem of his garment, was not responsible for the world, nor glorified by the evils in it, nor even cognizant of their existence. Plotinus could not explain the origin of evil; in fact he could not explain the origin of anything, his whole natural philosophy being unnatural, and merely a moral allegory. We must not assimilate unduly the Platonic eschatology to the He-



braic. In the latter, evil was originally an accident, which God parried dramatically, capping it with a greater good. This deity, as at first conceived, was by no means omnipotent, in the sense of being the only force at work in things, and having a calm eternal vision of them in their ultimate destiny. He was omnipotent only in the rhetorical sense that he could bring about practically anything he chose; a Titanic magician (such as Michael Angelo painted him), he could dart from place to place, and set right anything that in his absence might have taken a turn that displeased him. For things, although he might once have created them, all had a will and a way of their own; they made a great pother, and it was no sinecure to keep them in hand, and drive them all abreast. Afterwards the theologians, influenced by Greek and Oriental philosophies, found this dramatic notion of Providence crude, and tried to rationalize it. They thought God ought to be the serene author and spectator of the drama in which the popular imagination had made him a passionate actor; he must have foreseen and planned all the villainies and tears in it, in order to obtain a more moving effect at the end, when the tears should be dried, and the villainies punished or forgiven. Thus the evil that to religious sentiment seemed to offend God, according to religious theory really subserved his purposes: and having shifted their ground and contradicted their premises, the theologians had the "problem of evil" on their hands; and they still have it.

For the Platonist, however, the matter was not so hopelessly tangled. Evil he thought a weakness, an ignorance, a confusion which the influence of the divine life, if we could only appropriate it, was always ready to cure. Salvation was a return to nature, to what the spirit that works in us demands; and while none of the functions or organs which this spirit gathers about it was evil in itself, they stood in need of strict subordination. The only happy life for each function, for each level of endowment, lay in serving the one above it; the flesh must serve the heart, the heart the intellect, the intellect the single ultimate good. The standard of excellence for each faculty and for each creature was not placed, as in naturalism, in self-preservation and a congenial routine at that particular level; it was placed outside, in the higher excellence it immediately subserved. Not (let me repeat) that the vocation of each creature or faculty was to *become* the next higher; there was no such restless evolution in this hierarchy. But the life of each came from above, and could be fully received only by obedience and fidelity. So morality was made aristocratic. The joy of everybody could lie only in service, not in that service of equals or inferiors which a democratic morality now enjoins, but in a sort of feudal devotion to a

master brighter, purer, and stronger than ourselves. Plotinus was a very great prophet, although he thought little about the future. He caught completely the inspiration of his age and laid down in advance the essential principles of Byzantine art, of alchemy, of demonology, of medieval astrology and theology, of ascetic discipline, and even of feudal loyalty and romantic enchantment.

But what of "the problem of evil"? Such a problem properly exists only for the theologians I was just speaking of, who teach a deliberate planning and creation of the world *ex nihilo*, or for pantheists like the Stoics, who, in spite of their pantheism, wish to give universal authority to a particular ethics. It does not exist for the naturalist, because for him both good and evil are relative to finite interests necessarily at war in this crowded world. Nor does it exist for the Platonist, to whom it is obvious that the good is far away and that it was not the good that removed the good where it is absent. The problem of darkness does not exist for a man gazing at the stars. No doubt the darkness is there, fundamental, pervasive, and unconquerable except at the pin-points where the stars twinkle; but the problem is not why there is such darkness, but what is the light that breaks through it so remarkably; and granting this light, why we have eyes to see it and hearts to be gladdened by it. This truly idealistic and moral question Plotinus answers sublimely, saying that our hearts are themselves sparks, scattered by that celestial flame, that rush by nature to rejoin their element. This answer of the Platonic sage, for all its sublimity, can not be imposed on any one who is made sincerely happy by eating, fighting, loving, talking, and peering curiously about, or whose genius and situation, for any reason, carry him towards some different point of the moral compass. The Platonic good is the goal of a very special aspiration, now largely in abeyance. But things come round in this world; the ruffians may be upon us some day when we least expect it, and philosophy may have to retire again to the sanctuary. Even then we should search the books of Plotinus in vain for any solution of the artificial problem concerning the existence of evil; but if we searched them for a thread out of the natural labyrinth of evil, we might possibly find it.

G. SANTAYANA.

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## THE BELIEF IN SENSATIONS<sup>1</sup>

IN few of our sciences is the contrast between theory and practise so pronounced as in psychology. Its methods are, for the most

<sup>1</sup> This paper was read at the tenth meeting of the American Philosophical Association at Princeton, December 27-29, 1910. It was not published at the time because the author hoped to rewrite it and publish it as part of a more ex-

part, as direct and as easy of comprehension as the methods of other sciences. They are, in general, the same methods. There is as little difficulty in following intelligently an experiment on the time of perception, or on the delicacy of sensory discrimination, or on memory, as there is in following an experiment on the velocity of sound or on the expansion of gases. But there is extraordinary difficulty in finding in the standard works on psychology clear conceptions of the subject-matter of the science or clear definitions of its most elementary terms.

"Sensation," "perception," "consciousness," "mind," "state of consciousness," "mental process," are terms currently employed to indicate the specific character of the material with which the science deals, but there are no generally accepted definitions of them among psychologists and there is much confusion in attempts to state what they mean. For example, what difference, if any, is there between "tone" and the "sensation of tone," between "red" and the "sensation of red"? If there is a difference, the difference does not prevent the assertion that sensations have specific qualities, nor the enumeration of these qualities in terms of such distinctions as those of tone and color. Why, for instance, should sensations of color be qualitatively defined in terms of the spectrum or in terms of any of the numerous diagrams which may contain every possible color, if color and the sensation of color are different? If, however, they are not different, just what does their identification mean? Must we seriously conclude that colors are sensations? Are noises and tones sensations? Is pain a sensation? The answers to these questions are neither uniform nor unambiguous, and yet the assertion is repeatedly made, in some form or other, that sensations are the "first things in the way of consciousness," that they are the "elements of mind."

Similar confusion is evident when we look for some clear and generally accepted definition of "consciousness" and "mind." Is it proper to distinguish consciousness from what we are conscious of? If it is, how can we affirm that consciousness is a complex of elements such as "sensations" or "mental processes" and at the same time define these elements in terms of the things we are conscious of? But if "consciousness" and "what we are conscious of" are to be identified, what can such an identification possibly mean? Does anybody really believe that a "complex" of the elements of a consciousness thus identified with its object could ever be the memory of an event or the knowledge of a world?

tended study. In view of current discussions, however, it has seemed desirable to publish it now as one of the documents in the case. It appears as read, without any alteration in the text.



Furthermore, while we perceive, remember, imagine, think, reason, and act in a world which our best efforts can not distinguish from the world of physics, chemistry, and biology, psychology has so pictured its world—the mental world—that its relation to the world of general scientific interest becomes a problem which is often fundamental to the understanding of the scope and aims of psychology itself. The problem thus raised has afforded much discussion of the relation of mind and body, but it has received no solution. To say that the mental world and the physical world are “parallel,” that they are two aspects of the same world, that they are indications of two different points of view, that the one is the world of all observers, while the other is the world of one observer—to say these things is not to solve the problem, but to comfort oneself and possibly others by that illusion of progress which often attends the restatement of a difficulty. Although it is repeatedly asserted that “psychological parallelism” is the working hypothesis of psychology, I have not been able to discover any achievement of psychology which depends on that hypothesis or which that hypothesis serves in any degree to clarify or explain. Indeed, it seems as if all theories of the relation of mind to body are entirely irrelevant to the methods and results of psychology.

Some writers of psychological books still think it important to devote at least one chapter to a discussion of what “science” and “law” are in general, and to a vindication of psychology as a science which deals with laws. Chemists and physicists, however, do not generally begin their work with such epistemological introductions and are usually unconscious of any need of vindicating their methods or aims. Only bigotry could deny psychology the status of a science, so that this concern about “psychology as a science” must probably be set down more as a lingering reminiscence of the days when controversy was keen than as an indication of confused thinking. Yet the discussions of “introspection” as the peculiar method of psychology often cause doubts whether an introspective psychology is worth serious consideration. These discussions raise again the old questions which no one has successfully answered: How can a conscious process know itself? How can a succession of thoughts know itself as a succession? How can states of mind be observed if they are only remembered? How is identification by memory possible if no state of mind was ever conscious of itself? If it is true that “no subjective state, while present, is its own object,” but “its object is always something else”<sup>2</sup> is it not fair to ask if it is sensible to talk about “subjective states” at all? What are they? Who in the history of mankind has ever identified one,

<sup>2</sup> “Principles of Psychology,” William James, Vol. I., page 190.

finding somewhere in his conscious life a "state" which was "not its own object," but "whose object was always something else"? The question is not asked with the purpose of suggesting that there may be "states" which are "their own objects." It is asked solely with the purpose of indicating that the conception of such states is inherently unintelligible.

In striking contrast to all this confusion and ambiguity stand the performances and achievements of psychologists. Although their science is one of the youngest of sciences, if we have in mind the modern status, its record in the matter of practical success must be regarded as gratifying and encouraging. Psychology has profoundly affected our educational theory and practise. It has influenced medical science and therapeutics in a manner which, on the whole, has been helpful and sound. It has enlarged the outlook of physiology and given fresh impetus to the comparative study of behavior.<sup>3</sup> It bids fair to provide us with means of securing valuable estimates of human ability and capacity. In view of these successes, it would be absurd to claim that the theoretical confusion, which has been pointed out, is a necessary accompaniment of the science, something which must be put up with, but which is of little importance since practise goes on triumphantly in spite of it. Such an attitude is an indication of philosophical weariness, but not of matured wisdom. The moral for psychologists, if we must draw a moral for them, is obviously to give up the pretense that psychology is a science of consciousness, and then to redefine their science in terms of the material they actually study, the methods they actually use, and the results they actually attain. The theoretical confusion in psychology has not been pointed out here, however, with the intention of drawing any moral, but rather to introduce the consideration of a preconception which appears to have been at the bottom of that confusion and which seems to have been fatal to the attempts which psychology has made to tell what consciousness is.

It may be extravagant to single out one preconception in psychological theory and make it responsible for all the confusion. Yet there appears to be one which must bear the greater share of responsibility. To pursue it through all its windings and show just

<sup>3</sup> This word will frequently occur in these pages. As the sequel will show, "behavior," but not "consciousness," seems to me to be the thing which the psychologist does, as a matter of fact, investigate. To my own mind the psychologists who have used the concept of behavior rigidly have passed at once from theoretical confusion to theoretical clearness. Compare E. L. Thorndike, "Animal Intelligence," Ch. I.

I take this opportunity to refer, also, to the articles by Professor John Watson in the *Psychological Review*, Vol. XX., page 158, and in this JOURNAL, Vol. X., page 421.

how it has motived this and that ambiguous statement or conception, would be a wearisome task. Economy of effort may be served by examining it directly and showing how the abandonment of it works in the direction of clearness and simplicity. This preconception consists of the very current belief that there are such things as "sensations" which form a kind of elementary component of a stream of consciousness or of a mind.

The statement that belief in the existence of sensations is a preconception and the suggestion that the belief is unsound should not be set down at once as wild. To be sure, James, speaking for many an active worker in psychology, has said: "That we have *cogitations* of some sort is the *inconcussum* in a world most of whose other facts have at some time tottered in the breath of philosophic doubt. All people unhesitatingly believe that they feel themselves thinking, and that they distinguish the mental state as an inward activity or passion from all the objects with which it may cognitively deal. *I regard this belief as the most fundamental of all the postulates of psychology*, and shall discard all curious inquiries about its certainty as too metaphysical for the scope of this book."<sup>4</sup> Yes: but did he not follow this confession of faith by considering "a question of nomenclature" and finding no satisfactory term to "designate all states of consciousness merely as such, and apart from their particular quality or cognitive function"? Most evidently, then, "the most fundamental of all the postulates of psychology" had not impressed itself upon current speech nor produced as yet an appropriate expression of itself. In twenty years we are no better off. And the reason is this: while all people believe that they cogitate, very few people, if any, are able to distinguish their mental states as inward activities or passions from all the objects with which those mental states may cognitively deal. As a matter of fact, very few people believe that there are "states of consciousness as such," and consequently very few have felt the need of a term to designate them.

It may be said, however, that most people believe that they have "sensations." Yet it is very doubtful if the sensations in which people generally believe are the elementary components of mind in which psychologists often believe. For the term "sensation" is decidedly ambiguous, especially in its psychological usage. The word "sense" may be used as a verb to denote a uniform operation which may be directed toward different materials. Thus one may "sense a sound," or "sense a color," or "sense a pain." Such usage is not common, but it seems to indicate that the term "sensation" may be regarded as a general term for the operation of sensing.

<sup>4</sup> "Principles of Psychology," Vol. I., page 185.



Sensations would then be "sensings," the performance of the same operation more than once or in different directions. They would not be marked by qualitative distinctions from one another since they are just so many instances of the same operation. We may "shoot" in various directions and at various games, but our "shots" as "shootings" are all alike. No serious objection need be raised to the term "sensation" in the manner here indicated, as a general term to cover such operations as seeing, hearing,\* or, in general, sensing. So used, it is not marked by disastrous ambiguity.

But the term may be used to denote the material which is the object of the operation. Thus the color which is seen or "sensed" may be termed a "sensation," and we may recognize a great variety of sensations differing in quality in a manner corresponding to the different qualities of the things sensed. Here the term begins to be seriously ambiguous. For it is one thing to affirm that "blue sensed" is a sensation, but quite a different thing to affirm that blue as blue is a sensation. We may speak of the things we have shot as our "shots" if we are mindful why we so designate them, but it would be improper to affirm that a partridge is a shot. It is, however, just this sort of impropriety of which much psychology has been guilty. It has treated the things we sense as if their qualitative characters were themselves sensations, some kind of mental operation or process, and supposed, consequently, that an analysis of the qualities, intensities, extensities, etc., of the things we sense was an analysis of consciousness itself.

Now one does not ordinarily or readily believe that his consciousness or his mind is made up of colors, sounds, tastes, smells, and the like. Indeed, most well-trained and scientifically minded persons experience a shock if they are told that consciousness is so constituted. They may be willing to admit that they are conscious only when they see or hear or perform some similar operation, but they find consciousness unrecognizable when told that it is made up of what they see or hear, or that such things are the elements of mind, the first things in the way of consciousness. The psychologist may be justified in using the term sensation to denote the objects of sense as well as the operation, but he is under the serious obligation of showing by what right he regards the distinctively qualitative characters of these objects as sensations, mental elements, mental factors, mental functions, or mental processes; by what right he regards as conscious or mental anything whatsoever which is characteristic of the object.

It is at this point that the basal preconception which has vitiated so much psychological theory becomes most evident. It may be stated in several ways. For example, it is assumed that the im-

mediate data of consciousness—let them be called sensations, perceptions, thoughts, ideas—are somehow products or effects of the stimuli which excite the sense organs or the organism. Or we say it is assumed that the effect produced in the nervous system by a stimulus causes, or is somehow attended by, a fact which does not belong to the chain of facts which connects the stimulus and the organism, but which is a fact of a different order, a mental fact, a sensation. Or we say that it is assumed that the mechanism which is involved in the operations of consciousness somehow transforms, or is attended by, the transformation of the external stimuli to conscious activity into an internal world of conscious phenomena or states of mind. The simplest statement may, however, be taken from Locke's "Essay Concerning Human Understanding": "Our senses, conversant about particular sensible objects, do convey into the mind several distinct perceptions of things, according to those various ways wherein those objects do affect them. And thus we come by those *ideas* we have of *yellow, white, heat, cold, soft, hard, bitter, sweet*, and all those which we call sensible qualities; which, when I say the senses convey into the mind, I mean, they from external objects convey into the mind what produces there those perceptions."<sup>5</sup> This is the belief in sensations, in a kind of thing which is neither the stimulus nor the effect it produces through the sense organs on the nervous system, but which is believed to be a mental equivalent of that effect; and these effects are supposed to be either the immediate objects of consciousness or the elements of which consciousness or the mind is a system.

The remarkable thing, to my mind, about this belief is that there is so little good evidence for it. There is a general admission that it is not natural. We are repeatedly told that by far the greater number of us naturally believe that the immediate objects of consciousness are the very same objects which are the stimulus to thought, and that we need instruction by philosophy, psychology, and physiology in order to discover our mistake. We are also told that the natural belief in this matter represents the general attitude of positive science. Such admissions make it important that the evidence for the belief should be exceptionally strong. It is, however, exceptionally weak.

There is, for example, the evidence derived from the so-called relativity of sensation. Locke's instance of the water which is warm to one hand, but cold to the other is typical and frequently cited. The water itself, it is urged, can not be both warm and cold at the same time. The difference lies in our sensations. In other words, the fact that water is cold to one hand and warm to the other is

<sup>5</sup> Book II., Ch. I., page 3.

taken as evidence that we do not sense the heat of the water, but only its effects in us, the sensations it produces. But the relativity cited is evidence only of the fact that the water is warmer than one hand and colder than the other. Every case of the relativity of sensations can, I think, be dismissed in a similar manner. They all indicate the relativity of things to one another, but not the relativity of things to the mind or to our sensations of them.<sup>6</sup> Even the straight stick bent in a pool and the man who can not tell red from green lose their supposed metaphysical importance in the face of the fact that things vary in varying conditions quite irrespective of any appeal to states of mind. It is the difference between the refractive powers of water and air that bends the seen stick and it is a retinal, not a mental, consideration which makes the discrimination of colors impossible. I have even found it urged that the variation of color in different lights or under different conditions of color contrast proves that colors are sensations for the astonishing reason that if a rose were really red it ought to be seen red in the dark! Again; seeing things double has been used to prove that we have sensations, while all it proves is that we have two eyes. Moving the eye and so seeing the landscape move is cited as a good reason for concluding that we do not see the landscape, since the landscape surely does not move. But how can any landscape maintain an immovable relation to a moving eye, and how can an eye move except in relation to its surroundings? No, I repeat, the relativity of sensations witnesses to the relativity of things, but not to the existence of sensations as the component elements of consciousness.

There is also the type of evidence drawn from a consideration of such experiences as dreams and illusions. It is urged that here, at any rate, we have instances where on its qualitative side experience can be only mental. A dream as a dream or an illusion as an illusion must be of the very stuff of consciousness. Let them be. But one may still ask, How does that in any way prove that "sensations" exist and are the constitutive elements of mind? Whatever may be the causes of dreams and illusions and of whatever stuff they may be made, they exist apparently only because the sensory mechanism is inoperative or out of order. Our dreams vanish when we wake and the greatest obstacle in the way of having illusions is an unclogged sensory mechanism. It is difficult, therefore, to see how they can witness to the existence of sensations. Furthermore, it is too readily assumed by many that if one thinks he sees something which he really does not see, he must, none the less, see something like it; and that if one dreams of going to his boy-

<sup>6</sup> Compare the article by W. P. Montague, "A Neglected Point in Hume's Philosophy," *Philosophical Review*, Vol. XIV., page 30.



hood's home, he is having an experience similar to what he would have if he went there. When we dream of colors, do we see colors? When we have illusions of sound, do we hear sounds? Such questions have not yet been finally answered, but they must first be answered before we can give much evidential value to dreams and illusions. In our present state of knowledge dreams prove, when we have them, that we are dreaming of things, but not sensing them; and illusions prove that we are making mistakes, but not that we are having sensations.

Then there are such experiences as pain. I stick a pin into my brother's leg. He reacts in various ways, winces, cries out, but no scrutiny of mine can reveal distinctly to me the pain he feels. Yet he does feel pain, and any doubt I may have on the subject is sufficiently dispelled by sticking the pin into myself. And if so, how about my brother's tastes and smells, his feelings of roughness and smoothness? And if I infer these also, where am I to stop, short of concluding that he has an inner life of consciousness made up of existences like the existence of pain, real sensations of varying qualities?

But does this inaccessibility of pain to external observation prove in any way that pain is a sensation, a mental element, or state of consciousness? Does the fact that I can not sense my brother's pain, but must infer it, prove anything else than that my pain-sensing machinery is limited to my own pains? The pin may be a stimulus to both our organisms at once, but the pain is in my brother's leg, not mine, nor in the pin. We may both see the pin, hear the pin, touch the pin, taste, and even smell the pin, but neither of us sees, hears, touches, tastes, or smells the pain. If his pain were blue, I could see it; if loud, I could hear it; if sweet, I could taste it; and so on; but since it is none of these, I naturally can not sense it in these ways. And since my pain-sensing machinery is limited to my own pains, I never can sense his. But were this machinery not so limited, were it distance-sensing like my eyes, why, then, I could feel his pains as readily as I can see his face. Surely pain is not proved to be a sensation, a mental thing, by the fact that my own pains are all the pains I have. Having thus no evidential value in its own domain, it has none elsewhere.

The case of pain recalls the fact that believers in the existence of sensations as the elements of mind usually claim that sensations are accessible only to introspection. When, for example, the processes of vision are experimentally followed, the effect produced in the organism is some form of movement or behavior, but not a color. And what is true of vision appears true generally. Stimulate an organism and follow the stimulus experimentally through all the

mechanism involved, and the only discovered effect is a reaction, a type of behavior, but never a sensation. But, it is claimed, the sensations are discovered to introspection and we are bound, accordingly, to infer them or eject them whenever the situation warrants it. But the plain fact is that introspection does not disclose the existence of sensations, but only the existence of the things sensed. In one's own experience scrutinized and reflected on by one's self, color, for example, is never discovered in any respect as an elementary component of one's consciousness, as a mental thing; it is discovered as a stimulus to thought and behavior, but not as a stimulus to the production of a color sensation. Indeed the whole evidence of introspection makes for the non-existence of sensations. That it can be supposed to reveal to us what is experimentally undiscoverable is evidence solely of philosophical confusion. The appeal to introspection is, in reality, an appeal to the most direct, simple, and naïve conceptions of things. If, therefore, one is to test the belief in sensations by one's own direct and immediate experience, then the belief is doomed. And surely if sensations as the first things in the way of consciousness, as the constituent elements of mind, are discoverable neither by external observation nor by inward reflection, there is no good reason to believe in their existence and there is no conceivable service which this supposed existence can render. They form the subject-matter of no intelligible science whatever.

The belief in sensations has been questioned here in the interest of freeing the conception of consciousness from certain misconceptions and primarily the misconception that consciousness is definable in terms of the qualities of which we are conscious. But the position here taken should be construed as primarily negative, and not as warranting the affirmation of what it may appear to imply. For instance, when we deny that the things we perceive are in the mind, we are supposed to affirm that they are out of the mind. When we deny that we perceive internal objects, we are supposed to affirm that we perceive external objects. When we deny that sensations are effects somehow produced in the mind by stimuli affecting the organism, we are supposed to affirm that the mind somehow runs out of the organism and gets hold of the object, or surrounds it, or pervades it. Such suppositions may be naturally suggested by the denials, but they are not here intended. What is intended is simply that consciousness should not be thought of in a certain way. Freed from the notion that sensations are the primary objects of consciousness, we may proceed to the inquiry into what the objects of consciousness as a matter of fact are.

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## DISCUSSION

## PROFESSOR WATSON AND THE IMAGE

IN a recent article<sup>1</sup> Professor Watson makes a statement about certain facts reported by Dr. M. R. Fernald and myself, which I should like to call in question.<sup>2</sup> His general treatment of image and affection, together with his recently expressed views on behavior as a psychological category, I hope to discuss more fully in the future.

Professor Watson's words follow: "The failure on the part of the most earnest upholders of the doctrine of the centrally aroused sensation to obtain any objective experimental evidence of the presence of different image types. I refer here to the researches of Angell and Fernald. I think this admission paves the way for the complete dismissal of the image from psychology."

I find it difficult to take this last sentence literally, if it means what it seems to mean. Why the failure to find objective confirmation for such imagery TYPES as Galton and others had suggested should be thought to prejudice the reality of imagery itself, I do not understand. What my own work has shown is the amazing versatility with which different kinds of imagery may be employed upon the same task, so that if the form customarily employed be for any cause embarrassed, some other is ready to step in and do its work. In this sense it is true that I have not found any rigid adherence, save in a few quite unusual individuals, to fixed imagery types. I think it highly probable that there are imagery types, but they are presumably more complex in their composition than has been supposed, and they involve what I should call "shunt systems," within which any member may function for any other.

With much of Professor Watson's effort to magnify the significance of the articulatory processes I am in cordial sympathy, and I have on more than one occasion expressed my growing conviction of their importance in the thought processes. Those who sympathize with the effort to connect thought with peripheral operations will be interested in Dr. W. S. Hunter's suggestive defense of "sensory thought" in his paper published from my laboratory in the *Animal Behavior Monographs*.<sup>3</sup>

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<sup>1</sup> This JOURNAL, Vol. X., page 421.

<sup>2</sup> Page 422.

<sup>3</sup> W. S. Hunter, "The Delayed Reaction," *Animal Behavior Monograph*, Vol. 2, No. 6, 1912.



## REVIEWS AND ABSTRACTS OF LITERATURE

*Outlines of the History of Psychology.* MAX DESSOIR. Translated by DONALD FISHER. New York: The Macmillan Company. 1912. Pp. xxix + 278.

In the preface to the English edition we are told by the author that this small volume is not merely an abridgment of his larger history, but that the manner of treatment is somewhat altered in that a larger field is reviewed—the large volume contained only the modern German psychology—and some of the ground included in the former volume presented from an altered viewpoint. The leading concepts, however, have been retained.

There have always been, we are told, three sources of interest to which may be traced investigations of mental life. The disciplines corresponding to these three interests are termed by the author psychosophy, psychology, and psychognosis. Under the first we find theological and metaphysical doctrines of an immortal soul-substance; the second is psychology proper, whose chief concept is that of "a principle of activity at work within the human body." It is one of the good features of the book that these two distinct interests are more or less separated. In fact it would have been a decided advantage if the difference in these two viewpoints had been even more strongly emphasized throughout the book. The third, psychognosis, has to do with the character of one's fellowmen. It is a knowledge of human nature obtained from proverbs and poetry, from works of art, from autobiographies, etc. It is certainly, if of any, of minor importance to a history of psychology, and Dessoir merely gives a sketch of the field in the preface and makes no further reference to it.

There are four divisions to the book, treating respectively of the ancient conception of the life of the souls, the doctrine of the soul in the Middle Ages, the psychology of the seventeenth and eighteenth centuries, and the psychology of recent times.

The first interest in the soul was a theological one. Here we find the doctrine of transmutation of Pythagoras, Empedocles, and Heraclitus. Along with this treatment runs a biological interpretation. In Plato's philosophy, besides a development of his ethical interests are truly psychological observations of the laws of association. Under the genetic-rational psychology of Aristotle is given his description of the three souls and their location and his idea of the double *vous*, as well as his description of perception and the emotions. A sketch of the ethics of the Epicureans and the Stoics and the mysticism of Plotinus, as far as they are concerned with a concept of the soul, are introduced, and a number of pages are devoted to the interesting doctrines of Augustine, who advocated a study of the purely psychical—an analysis of consciousness and a classification of mental states "and thus indicated for the first time the possibility of psychology as an independent science."

In the Middle Ages the various tendencies of the modern doctrines of the soul were established. The St. Victorians, although they did use rationalistic expressions, described conscious life as a "stream" and directed

their attention principally to the facts of the will and feeling. Among the Arabs Alhazen was surprisingly scientific. Not only did he write an "Optics," but his theories of apperception and unconscious inference were most noteworthy. Dessoir says: "These doctrines of the Arabs were an intimation that some day a Helmholtz would appear." Not less scientific were Telesio's theory of the education of the sense of touch and Campanella's treatment of the threshold of sensation. Ludovicus Vives insisted upon a separation of psychology and philosophy. The former must engage in a study of mental phenomena and their laws. In England Roger Bacon, influenced by Alhazen, adopted an empirical attitude toward the study of the soul, and Kepler and Galileo encouraged an accurate quantitative deduction and mechanical interpretation. Along with these men, however, we find those strongly influenced by theological interests and mystical dispositions, those who took the Trinity as a pattern for their descriptions. In the writings of Thomas Aquinas, the most important representative of scholastic philosophy, we again find the dialectic method. He tried to unite sensationalism and rationalism. For him the accidental and essential in things correspond to the sensible and rational faculties of knowledge.

The psychology of the seventeenth and eighteenth centuries begins with Descartes, whose interest, however, was philosophical rather than psychological. His method, too, was constructive and not analytical as was that of Vives. In the writing of Hobbes "the notion of a mechanical impulsion of conscious content appears already in rather palpable form." Malebranche was more empirical in his psychology. His observations on sense illusions were the most thorough thus far attempted, although they were instigated by philosophic motives. He was also interested in psychological investigations and indeed he was as a psychologist superior to Descartes and Hobbes as well as to Spinoza, whose ambiguous and fruitless treatment of psychological problems helped to bring this need (of an epistemological critique of psychology) to greater realization." The epistemological problems were the basis for Locke's and Hume's investigations. David Hartley, interested in an explanation of life, adopted a theory of association of ideas, and the theory of the sensationist Condillac was a forerunner of that of Herbart! Tetens deserves the title of the father of psychology not as the author of the classification of mental states or as the representative of faculty psychology, but as an analyst. For Leibnitz psychology was the fundamental principle of philosophy. The idea of the unifying principle in consciousness, growing out of the teachings of Plato, Aristotle, and the Stoics, reached its climax in his psychology. In Wolff's rational psychology we again meet with the concept of mental faculties. Crusius also defended the doctrine of faculties so energetically attacked by Locke.

This brings us to a long description of the Kantian criticism of rational and empirical psychology, which introduces the psychology of recent times. It is not justifiable, says Dessoir, to support the nativistic theory of space perception on the Kantian doctrines, "on the other hand, the psychology which turns its attention especially toward relations, form

qualities, complexes, etc., may rightly credit itself with origin from Kant." The doctrine of mental faculties again appears in the teachings of Reinhold and is opposed by G. E. Schulze. The dialectic philosophy of Fichte emphasizes the unity of the soul and its form-creating energy. After a sketch of Hegel's system, there follows the nature psychology of Mesmer and Schilling, Eschenmayer and Schubert, etc. Fries and Beneke believed psychology should form the basis of all historical sciences and metaphysics. Fries combated a mechanical interpretation of psychic phenomena and pictured the soul as a complex of dispositions. Beneke opposed the faculty psychology and maintained that the mind was a process, a flux and transformation. Herbart applied the concept of force in his description of consciousness and his school encouraged the empirical tendency of the science.

Finally, we have the founding of modern psychology. Condillac is mentioned as the first of the modern French psychologists. Gall's phrenology influenced psychological development. Maine de Biran used the feeling of voluntary effort as a basis for a voluntaristic psychology. Against the "sentimental" philosophy of Jouffroy and Cousin was opposed the positivism of Comte. Taine's chief gift to the science was the introduction of the study of abnormal states. Representing English psychology, we have the associationists, the Scotch school, and the Spencerian evolutionists. Of William James's many contributions to psychology, his theories of mental flux and change and unity of consciousness are mentioned. What justified Dessoir in including James with those who made "idealistically inclined contributions to the problem of mind" is not apparent. Of the Germans Waitz, Weber, and Fechner are mentioned, and the psychology of Lotze is more fully described.

The book ends with a bibliography, an index of names, and another of subjects.

It is a most difficult task to condense into a small book a mass of facts such as Dessoir has collected and yet make the work thoroughly intelligible. This Dessoir has to a large extent succeeded in doing. The treatise remains, however, a mere sketch and will not be easy reading for the immature student. For those with more philosophic training the book will be an aid toward systematization. Although in general the arrangement of the book is good, some of the sub-titles are confusing. For instance, why should the physiological psychology of the Arabs be coordinated with psychology as history of spiritual activity under the main head of psychology from the standpoint of theologico-metaphysical thought? From the point of view of an experimentalist it is regrettable that more space was devoted to so-called psychosophy than to pure psychology. A history of psychology, which will be of intrinsic value to the empirical psychologists, is still to be written.<sup>1</sup> Let us hope that it will come from the pen of an experimentalist.

Fisher's task was not easy, and although some places might be

<sup>1</sup> Otto Klemm's "*Geschichte der Psychologie*" does not quite meet their needs.



smoother, yet his choice of words is very good and the translation on the whole is very satisfactory.

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*The Principles of Science.* W. F. COOLEY. New York: Henry Holt and Company. 1912. Pp. iv + 245.

In this book the author treats his subject-matter in three parts, which are entitled, respectively, "Methods," "Results, Empirical Principles," and "Basal Principles." The first part discusses the definition of scientific knowledge, the fundamental modes of procedure in science, the use of analogy, and the criteria of truth; the second deals with concepts like matter, energy, law, and evolution; the third takes up the fundamental postulates, including the question of rationality and the existence of an external world. While the discussion, owing to its subject-matter, inevitably leans towards the abstract, the author is on the whole very successful in presenting his material in a manner adapted to the beginner and in stimulating him to reflect on questions that lie just beyond the circle within which the physical sciences ply their trade. Whether the logical order of presentation—Methods, Results, and Basal Principles—coincides with the pedagogical order is doubtless open to debate, yet the book can be recommended to those who are interested in the approach to philosophy from the side of science. To each chapter is appended a set of questions which lend themselves well to class-room purposes.

Since the aim of a book like this is to encourage philosophic reflection on the procedure and content of the sciences, the philosophical standpoint which it embodies is a matter of primary importance. And this standpoint, like every other standpoint in philosophy, is bound to provoke criticism and dissent. It may plausibly be charged that the author falls into the old, familiar formalism and abstractness which has been the bane of logic for so many generations. While not stated in so many words, the point of view which the author adopts commits us once more to the assumption that the mind exercises its powers upon a world which, so far as the knowing processes are concerned, merely lends its presence as so much passive and ready-made material. This assumption to a certain extent neutralizes the discussion of important topics. Science, for example, is said to confine itself to ideal cases, but the relation of the ideal to the actual is not made sufficiently clear. Philosophy is held to find its subject-matter in the vague, in "the penumbra, not the strongly lighted part, of the domain of inquiry" (p. 12), which carries with it the inevitable connotation that philosophy is primarily a variety of salaried dreaming, and ignores the fact that it may be as definite in its own field as other subjects, but differentiates itself from them in the questions which it seeks to answer. Positivism is criticized because of its rigid separation between datum of sense and the operations of thought, yet this great gulf remains when the discussion is finished. This lack of a concrete guiding principle appears also in the discussion of analogy and of matter and substance. The chapter on the criteria of truth contrasts, indeed, the absolutistic with the pragmatic temper and programme, but is less posi-

tive than could be wished for a beginner, and, despite the importance of the subject, has no vital bearing on the rest of the volume, which appears to take the absolutistic criterion for granted. It is in line with this procedure that concepts like invariability, rationality, and externality are treated without adequate definition.

It may be that criticism such as this is out of place, since it tends, perhaps, to obscure and minimize the genuine merits of the book. The usefulness of a book is doubtless determined by various qualities besides that of coherence and profundity, and, moreover, the demands which we are entitled to make upon a book must be limited by reference to the purpose for which it was written. Yet, in spite of such considerations, it may be insisted that if any substantial advance is to be expected in the field of logic and the teaching of logic there must take place a fundamental change in attitude and aim from that which has prevailed so long in the past.

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## JOURNALS AND NEW BOOKS

THE INTERNATIONAL JOURNAL OF ETHICS. April, 1913. *The Practical Tendencies of Bergsonism* (253-275): A. O. LOVEJOY. - A study of some of the practical consequences deduced from varying interpretations of his "intuition" as implying unity, absolute change, emphasis upon the primitive, and upon life as essentially transmissive. A second paper will discuss the implications of two more important versions. *A Statistician's Idea of Progress* (275-928): WALTER F. WILLCOX. - Problem of progress is not to be settled by the statistical method, but in the United States we find "a rapid increase in population and probable increase in length of life, an increase in racial uniformity and perhaps in uniformity of other sorts connected with immigration, and at the same time a decrease in uniformity of economic status and income and a probable decrease in the stability and social serviceability of family life." *The Problem of Christian Ethics* (298-310): JOHN M. MECKLIN. - This is the problem of the harmony of the worldly and other-worldly in the person of Jesus. *The Sociological Era* (311-323): M. E. ROBINSON. - An imaginative sketch of social life when the idea of duty shall have given place to "sympathy guided by sociological knowledge." *Is it Must or Ought?* (323-339): EZRA B. CROOKS. - "Reason forces on me, by its discovery and interpretation of the facts of my personality and its world, an ought to act whose obligation is as great as is the unity and significance of my character." *Reviews*: George E. Moore, *Ethics*: SYDNEY WATERLOW. Rudolf Eucken, *The Truth of Religion*: A. L. LILLEY. John Watson, *The Interpretation of Religious Experience*: K. COSTILLOE. E. BOUTROUX, *The Beyond that is Within*: A. E. TAYLOR. J. H. JEFFS, *Concerning Conscience*: J. B. PAYNE. R. A. P. ROGERS, *A Short History of Ethics*: C. D. BROAD. Oliver Lodge, *Modern Problems*: T. WHITTAKER. Havelock Ellis,

*The Task of Social Hygiene*: T. WHITTAKER. *Problems in Eugenics, Papers Communicated to the First International Eugenics Congress*: T. WHITTAKER. Thomas Holmes, *Psychology and Crime*: J. B. PAYNE. J. Novicow, *Mécanisme et Limites de l'Association Humaine*: CHARLES A. ELLWOOD. Carl Becker, *Vom geistigen Leben und Schaffen*: R. SMITH. F. C. S. Schiller, *Formal Logic*: J. B. PAYNE. Claire Richter, *Nietzsche et les Théories Biologiques Contemporaines*: A. SCHINZ. Paul Carus, *Philosophy as a Science*: NATHANIEL SCHMIDT. Harold P. Cook, *The Teaching of Philosophy to Pass-Men*: G. H. GEACH.

REVUE PHILOSOPHIQUE. May, 1913. *Le rôle de la pesanteur dans nos perceptions spatiales* (pp. 441-451): B. BOURDON. — Perceived space is a complex experience greatly modified by our sensations of weight, which give us primarily our sense of the horizontal and perpendicular. *Association mentale et causalité psychologique* (pp. 452-470): G. L. DUPRAT. — Psychic causality is explained by the author through the existence of "ideo-affective syntheses with continuous evolution." *Le problème des origines de l'art et l'art paléolithique* (pp. 471-485): LUQUET. — A criticism of Reinach's theory that the origin of art was in magic. *La psychiatrie de Kraepelin, son objet et sa méthode* (pp. 486-514): BARAT. — A critical study of Kraepelin's work from the point of view of the logic of his theoretical principles. *Analyses et comptes rendus*. J. de Gaultier, *Comment naissent les dogmes*: G. PALANTE. A. Dorner, *Pessimismus, Nietzsche und Naturalismus*: J. L. SCHLEGEL. K. Furtmüller, *Psychoanalyse und Ethik*: M. SOLOVINE. A. Bauer, *La conscience collective et la morale*: DR. S. JANKÉLÉVITCH. Roussel-Despierres, *La hiérarchie des principes et des problèmes sociaux*: J. BOURJADE. Dr. G. Le Bon, *La révolution Française et la psychologie des révolutions*: DR. S. JANKÉLÉVITCH. *Notices bibliographiques. Revue des périodiques*.

Herbert, S. *The First Principles of Evolution*. London: Adam and Charles Black. 1913. Pp. ix + 346. \$2.00.

Kitchin, Darcy B. *Bergson for Beginners: A Summary of His Philosophy*. New York: The Macmillan Company. 1913. Pp. vii + 255. \$1.50.

MacCunn, John. *The Making of Character: Some Educational Aspects of Ethics*. New York and London: The Macmillan Company. 1913. Pp. vii + 226. \$1.25.

Wright, Henry W. *Self-realization: An Outline of Ethics*. New York: Henry Holt and Company. 1913. Pp. vii + 429.

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## NOTES AND NEWS

### LETTER FROM PROFESSOR TUFTS

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

IN the report of my paper read before the Conference on the Relation of Law to Social Ends, the types attribute an opinion to Justice Holmes



(pp. 517-18) which he did not hold. A majority of the justices gave an opinion that the municipal coal-yard could not constitutionally be authorized, but Justice Holmes dissented.

JAMES H. TUFTS.

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PROFESSOR LILIAN J. MARTIN, of Stanford University, has received from the University of Bonn the honorary degree of Master of Liberal Arts and Doctor of Philosophy. The degree was conferred in recognition of original investigations in experimental psychology and esthetics. The diploma specifies particularly the achievements of Professor Martin in the introduction and development of a method of exact measurement for the study of mental images, and in devising and formulating a method for the study of memory by the projecting of mental images.

A NEW quarterly magazine, *The Psychoanalytic Review: A Journal Devoted to an Understanding of Human Conduct*, has just been launched in New York under the editorship of William A. White, M.D., and Smith Ely Jelliffe, M.D. The editors "aim to make it a complete and true reflection of the work being done along psychoanalytic lines in all departments of thought, not only in medicine, but in various other fields, wherever such work has any bearing, direct or indirect, upon the problems of psychopathology."

IN accordance with the recent action of the House of Delegates the educational authorities of Prussia have authorized the establishment at the University of Halle of a chair in pedagogy. This will be the first professorship in pedagogy to be established in any Prussian university. A pedagogical seminar has been organized and placed in charge of Dr. Alfred Rausch, Director of the Franckesche Latin School in Halle. Dr. Rausch will give instruction in the theory and practise of education.

IN the *Neue Weltanschauung* for 1913, Dr. Breitenbuch directs attention to the fact that the present year is the jubilee (fiftieth year) of Professor Ernst Haeckel's work on evolution. The article includes a chronological account of Haeckel's studies during that long period, with brief notes on the numerous memoirs and works which have made his name famous.

A GRADUATE school of education has been established at Bryn Mawr College. It is under the charge of Professor Kate Gordon, associate professor of education, Dr. Mathilde Castro, director of the Model School, and Professor James H. Leuba, professor of psychology, who will give a graduate course on the psychology of defective and unusual children.

DR. LEWIS M. TERMAN, associate professor of education at Stanford University, has been elected a member of the permanent International Committee on School Hygiene and has also been made the vice-president of the Council of Thirty of the American School Hygiene Association.

PROFESSOR ALEXANDER T. ORMOND has resigned the McCosh professorship of philosophy at Princeton University to accept the presidency of Grove City College.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### AN EXTENSION OF THE ALGEBRA OF LOGIC

BY the "algebra of logic" I mean, for the purposes of the present paper, Boole's calculus, in its classic form. I shall ignore, for the time, all the applications of this calculus to "classes," to "propositions," or to any other special sorts of objects. By the "Boolean entities" I shall here mean simply whatever entities conform to the laws which Boole's algebra expresses. There are such entities,—for instance, "classes," and "propositions," as well as "areas." But there are other Boolean entities than these; and I am here concerned only with Boolean entities abstractly viewed.

#### I

Considered as an algebra, the Boolean calculus, as is well known, occupies an unique but disappointing place among the algebras known to modern mathematics. In opening two remarkable contributions to the algebra of logic which were published a few years ago<sup>1</sup> Whitehead said that Boole's algebra might be compared with the chemical element argon. For, as Whitehead remarked, Boole's calculus had so far refused to form compounds with other equally elementary theories. Whitehead himself undertook, in the papers in question, to contribute towards the needed change of this unprofitable state of isolation. But, important as his results were, Whitehead has not, so far as I know, published further researches upon the same topic. The problem remains still on our hands: Can any one discover devices to make this argon among the pure algebras somewhat better disposed to unite with its fellow-algebras?

This question may seem to have a merely formal interest: and in this paper I shall deal wholly with formalities. Yet, as I hope to show in future papers, very interesting philosophical issues are bound up with the answer to the question which Whitehead's comparison of the Boolean calculus to argon presents to our notice. This is a region of philosophy where some of the most abstract, and some of the deepest and richest of philosophical interests lie very near together.

<sup>1</sup> See *American Journal of Mathematics*, Vol. 23, pages 139, 297.

## II

## THE NATURE OF THE BOOLEAN OPERATIONS

The general reason why Boole's calculus has proved so austere unproductive of the mathematical novelties for which Boole himself hoped, is well known. The fundamental operations of the Boolean calculus, *viz.*, the "addition" and the "multiplication" which characterize this algebra, appear, at first sight, to promise notable new combinations, since, like the corresponding operations in ordinary algebra, they are both commutative and associative. Furthermore, each of these Boolean operations is distributive with reference to the other. Their dual relation to "negation," as expressed in "De Morgan's theorem," is a very attractive property, which especially helps to give to this algebra its unique place amongst forms of symbolism. But alas, neither the "multiplication" nor the "addition" of this algebra is unconditionally invertible. Nor is the result of such inversion, when there is such a result, free from ambiguity. "Division" and "subtraction" have existence only subject to exasperating restrictions; and have never received any really notable development. In brief, the fundamental operations of the algebra are not group-operations. Hence the theory of groups is, except for one striking, but, so far, comparatively unfruitful exception, inapplicable to the Boolean algebra in its classic form. But without group-operations how shall an algebra progress?

## III

THE OPERATION OF JEVONS, THE PRIME-FUNCTIONS OF WHITEHEAD,  
AND THE *T*-RELATION

The exception just mentioned, the one group-operation which the Boolean calculus in its original form permits, was first noticed by Jevons. Schroeder and, still later, Whitehead, have dealt with it at considerable length. I have here only a word to add to the observations which Schroeder and Whitehead have made upon this particular topic; but this word relates, I believe, to a logical relation whose philosophical importance may appear, as I hope, in papers which I hope later to prepare.

Jevons noted that the three Boolean equations:—

$$\begin{aligned} \overline{ab} + \overline{a}b &= c, \\ \overline{b}c + \overline{b}c &= a, \\ \overline{a}c + \overline{a}c &= b, \end{aligned}$$

express precisely equivalent propositions, since each of them follows from either of the others. Schroeder and Whitehead have in somewhat different ways expressed the very natural observation that this



equivalence of the three equations of Jevons defines a group-operation.

Let  $a\bar{b} + \bar{a}b = (a \circ b)$ , where the symbol  $\circ$  stands for an operation performed upon the elements of the pair  $(a, b)$ . Then, if we suppose that this operation is viewed as already known,—we observe that whatever pair of the “logical entities” of the Boolean calculus we may choose, the entity  $(a \circ b)$  is itself a perfectly determinate Boolean logical entity. The operation  $\circ$  is commutative and associative. The three equations of Jevons show that this operation is not only invertible, but is also its own inverse, so that the three symbolic expressions,  $(a \circ b) = c$ ,  $(a \circ c) = b$ ,  $(b \circ c) = a$ , express mutually equivalent propositions. The group defined by this operation is the “axial group,” as has been pointed out by Professor Miller, of the University of Illinois, to whom I owe this last observation.

Whitehead has proposed to call functions whose form is that of  $a\bar{b} + \bar{a}b$ , “prime functions” or simply “primes.” For a reason, explained in his papers,<sup>2</sup> Whitehead also calls these functions “primary primes.”

The equation:  $a\bar{b} + \bar{a}b = c$  appears, at first sight, to be expressive of a triadic relation of the elements  $(a, b, c)$ . But as early as 1905 I myself noted that the relation involved is in fact *tetradic*. This latter observation was at that time, I think, new; and I have never heretofore printed the very obvious statements regarding this tetradic relation which here follow, and which I have constantly used in lectures ever since 1905. Some fellow-students may still find novel the form of expression which I employ.

Let us suppose true the equation:—

$$a\bar{b} + \bar{a}b = c\bar{d} + \bar{c}d.$$

Then the four elements  $(a, b, c, d)$  stand in a symmetrical tetradic relation which can be expressed by solving the equation, successively, for  $a$ , for  $b$ , for  $c$ , and for  $d$ . Thus,

$$\begin{aligned} a &= (bc + \bar{b}\bar{c})\bar{d} + (b\bar{c} + \bar{b}c)\bar{d}; \\ b &= (a\bar{d} + \bar{a}d)c + (a\bar{d} + \bar{a}d)\bar{c}; \\ &= (ac + \bar{a}\bar{c})d + (a\bar{c} + \bar{a}c)\bar{d}. \end{aligned}$$

That is, in case the equation:  $a\bar{b} + \bar{a}b = c\bar{d} + \bar{c}d$ , is true, each of the four elements of the tetrad  $(a, b, c, d)$  is a determinate symmetrical function of the three remaining elements, while the form of this function remains the same, whatever one of the four elements we choose to express in terms of the others. I propose to symbolize the totally symmetrical tetradic relation here in question by the relational form  $T(abcd)$ , which is to be read as a proposition: “The four

<sup>2</sup> See *American Journal of Mathematics*, Vol. 23, page 147.

elements ( $a, b, c, d$ ) stand in the four-term relation  $T$ ." The proposition  $T(abcd)$  is thus precisely equivalent to any one of the equations:

$$ab + \bar{a}b = cd + \bar{c}d; \quad a\bar{c} + \bar{a}c = bd + \bar{b}d, \text{ etc.}$$

The properties of this  $T$ -relation are then the following:—

1. The relation is (as just pointed out) totally symmetrical. That is,  $T(abcd) = T(cdba) = T(dcab)$ , etc.

2. Given ( $a, b, c$ ) or, in fact, given any triad of the elements of the tetrad ( $a, b, c, d$ ), chosen quite without restriction,—then, by the requirement that  $T(abcd)$  shall be true, the fourth element of the tetrad is uniquely determined.

3. The  $T$ -relation  $T(abcd)$  remains invariant in case, for any *two* of the elements of the tetrad, we substitute their respective negatives. Thus  $T(abcd) = T(ab\bar{c}\bar{d}) = T(\bar{a}\bar{b}cd)$ , etc.

4. The  $T$ -relation is *transitive by pairs*. That is, if  $T(abcd)$ , and if  $T(abef)$ , it follows that  $T(cdef)$ . For  $a\bar{b} + \bar{a}b = c\bar{d} + \bar{c}d = e\bar{f} + \bar{e}f$ .

5. If  $T(abcd)$  and if  $a = b$ , then it follows that  $c = d$ ; if  $b = c$ , then  $a = d$ , etc. Conversely,  $T(aabb)$ ,  $T(\bar{a}\bar{a}bb)$ ,  $T(aaaa)$ , are true propositions, whatever Boolean elements  $a$  and  $b$  may be.

If, hereupon, we make the logical element 0 a member of a tetrad, and if  $T(abc0)$  is true, this fact may also be expressed by any one of the three equations of Jevons:—

$$\bar{a}b + \bar{a}b = c, \quad b\bar{c} + \bar{b}c = a, \quad a\bar{c} + \bar{a}c = b.$$

It follows that equations involving the "prime-functions" of Whitehead can be expressed in terms of  $T$ -relations; and that, in particular, the equation:  $a\bar{b} + \bar{a}b = c$  should be regarded, *not* as simply expressive of a triadic relation of ( $a, b, c$ ), but rather as expressing a symmetrical tetradic relation of  $a, b, c$ , and 0.

This, the only group-operation of the classical Boolean algebra, may thus be regarded as deriving its properties from those of the  $T$ -relation. The total symmetry of this tetradic relation is responsible for the simplicity of the group in question, and for its comparative unfruitfulness as a source of novelties in the Boolean calculus.

I shall have occasion to return to the  $T$ -relation in various stages of the inquiry which is herewith begun.

#### IV

##### THE ORDINAL FUNCTIONS

So far we have traversed what is, on the whole, decidedly familiar ground. From this point onwards we shall deal with matters which I believe to be novel.

There exists a class of functions, in the algebra of logic, to which, since 1909, when I first observed some of their more interesting properties, I have devoted a good deal of study. Here is not yet the place to tell why these functions are as important for logical theory as I believe them to be. My present task will be limited to defining these functions, and to showing that, by making a due use of them, we can easily lay the foundation for a very considerable extension of the classical Boolean calculus. I shall give to the functions in question the name "ordinal functions."

Every student of Boole's algebra is familiar with functions of the form:—

$$p = axy + bx\bar{y} + c\bar{x}y + d\bar{x}\bar{y}.$$

It occasionally happens, in dealing with the solution of equations, that one may meet with the special case where  $a = \bar{d}$ ,  $b = \bar{c}$ . The foregoing function then becomes:—

$$\begin{aligned} p &= axy + bx\bar{y} + \bar{b}\bar{x}y + \bar{a}\bar{x}\bar{y} \\ &= abx + \bar{a}\bar{b}\bar{x} + \bar{a}by + ab\bar{y}. \end{aligned}$$

If  $p = 0$ , the resulting equation has an interesting pair of roots. For by virtue of the foregoing transformation, which the special function here in question permits, the two unknowns ( $x, y$ ) in the equation:—

$$axy + bx\bar{y} + \bar{b}\bar{x}y + \bar{a}\bar{x}\bar{y} = 0,$$

can be separated for the purpose of solution. For we have, as above:

$$abx + \bar{a}\bar{b}\bar{x} + \bar{a}by + ab\bar{y} = 0.$$

Hence

$$\begin{aligned} \bar{a}\bar{b} &\text{---} < x \text{---} < \bar{a} + \bar{b}, \\ \bar{a}b &\text{---} < y \text{---} < \bar{a} + b. \end{aligned}$$

The equation is therefore soluble, not only without condition, but in a peculiarly simple form.

By an ordinal function I mean a function of four terms which has the form here illustrated by  $p$ .<sup>3</sup>

In the foregoing case,  $p$  appears as a function of the two unknowns ( $x, y$ ), and of the two coefficients ( $a, b$ ), together with their negatives ( $\bar{a}, \bar{b}$ ). For our further purposes, this distinction between the "unknowns" and "the coefficients" may be left out of account. But we still need to note that an ordinal function is to be viewed as a function of four terms which are regarded as first divided into two pairs, while the function itself depends upon the way in which these pairs are chosen, are arranged, and then are submitted to the operations which characterize the form above illustrated.

<sup>3</sup> The ordinal functions here defined form one special case in the class of functions which are sums or products of Whitehead's "secondary primes." But Whitehead does not discuss in any detail this special case.



A few examples may help to make clear what is essential to the form of an ordinal function. Let the four elements ( $a$ ,  $b$ ,  $c$ ,  $d$ ) and their respective negatives be used. Let

$$\begin{aligned} p &= abc + \bar{a}\bar{b}\bar{c} + a\bar{b}d + \bar{a}b\bar{d}, \\ q &= \bar{a}\bar{b}c + \bar{a}b\bar{c} + a\bar{c}d + \bar{a}c\bar{d}, \\ r &= \bar{b}\bar{c}d + \bar{b}c\bar{d} + a\bar{b}d + \bar{a}b\bar{d}, \\ s &= \bar{a}\bar{c}d + a\bar{c}d + abc + \bar{a}\bar{b}c. \end{aligned}$$

In the formation of each of these functions there is followed a set of rules which may be grasped by analyzing first the structure of the function  $p$ .

In order to form  $p$  we first select the two pairs ( $a$ ,  $b$ ) and ( $c$ ,  $d$ ). Let the pair ( $a$ ,  $b$ ) be called, for the moment, the *first* of these pairs, and the pair ( $c$ ,  $d$ ) the *second* pair. Each of these pairs, as it is here written, has its own first and its own second member.  $p$  is then defined by means of the five directions which here follow:

1. Take the continued product of both elements of the first pair into the first element of the second pair. We thus get the product  $abc$ .

2. Then form the product of the respective negatives of both elements of the first pair into the negative of the first member of the second pair. We now have the product  $\bar{a}\bar{b}\bar{c}$ .

3. Next form the continued product of the first member of the first pair, into the negative of the second member of the first pair, and into the second member of the second pair. We thus form the product  $a\bar{b}d$ .

4. Hereupon form the product of the negative of the first member of the first pair, into the second member of the first pair, and into the negative of the second member of the second pair. This gives us the product  $\bar{a}b\bar{d}$ .

5. Finally, take the sum of the four products thus successively formed. This sum gives us  $g = abc + \bar{a}\bar{b}\bar{c} + a\bar{b}d + \bar{a}b\bar{d}$ .

It will facilitate a survey of the rule whereby an ordinal function is formed, to use the following new symbolism. Let

$$abc + \bar{a}\bar{b}\bar{c} + a\bar{b}d + \bar{a}b\bar{d} = (ab; cd).$$

Here the expression which follows the symbol  $=$  is a new symbol introduced, quite arbitrarily, simply to remind us of the foregoing five directions. This new symbol has the advantage of showing that the pairs ( $a$ ,  $b$ ) and ( $c$ ,  $d$ ) are distinguished, for the purpose here in question, as the first and the second pair. In the arbitrary symbol  $(ab; cd)$ , the semicolon separates these pairs. And the expressions  $ab$ , and  $cd$ , when thus separated by a semicolon, and together inserted, in this order, in a parenthesis, are not, in that context, to be understood as symbolizing logical products. The ex-

pression:  $g = (ab; cd)$  is to be read: "The function  $g$  is that function of the four elements ( $a, b, c, d$ ), which is formed by taking ( $a, b$ ) and ( $c, d$ ) as distinct pairs, whereof ( $a, b$ ) is the first pair and ( $c, d$ ) the second, and by then applying the five directions given above. Since these directions are themselves quite general, it would be easy to interpret as determinate ordinal functions any analogous expression, such as  $x = (pq; rs)$ ;  $y = (pr; qs)$ , etc. Thus  $x = (pq; rs)$  is equivalent, in terms of the ordinary Boolean calculus, to the equation:

$$x = pqr + \bar{p}\bar{q}\bar{r} + p\bar{q}s + \bar{p}q\bar{s}.$$

And  $y = (pr; qs)$  is equivalent to the equation:—

$$\begin{aligned} y &= prq + \bar{p}\bar{r}\bar{q} + p\bar{r}s + \bar{p}r\bar{s} \\ &= pqr + \bar{p}\bar{q}\bar{r} + p\bar{r}s + \bar{p}r\bar{s}. \end{aligned}$$

As to the following functions of the tetrad ( $a, b, c, d$ ):

$$\begin{aligned} h &= abd + \bar{a}\bar{b}\bar{d} + \bar{a}\bar{b}c + \bar{a}bc, \\ m &= \bar{a}\bar{b}c + \bar{a}b\bar{c} + \bar{a}cd + \bar{a}c\bar{d}, \end{aligned}$$

it is plain that they may be written:

$$\begin{aligned} h &= (ab; \bar{d}c) = (\bar{a}\bar{b}; \bar{c}\bar{d}), \\ m &= (ac; \bar{b}\bar{d}) = (\bar{a}\bar{c}; \bar{d}\bar{b}). \end{aligned}$$

For if we choose any one of the four expressions here written in parentheses, and if we regard each expression as a shorthand direction to apply our rule for forming ordinals to the two pairs which the semicolon (as used in each of these cases), separates, the resulting functions are as we have just written them.

In sum then, I mean, by an ordinal function, a function of four elements such that, if we begin with the form ( $ab; cd$ ), interpreted as above, we can form all possible ordinal functions by substituting for the tetrad ( $a, b, c, d$ ) other tetrads of symbols which stand for logical elements; by changing the order of the elements and of the pairs which are in question; and by introducing the negatives,  $\bar{a}$ ,  $\bar{b}$ , etc., into the expressions.

In case we confine ourselves to the elements ( $a, b, c, d$ ) and their respective negatives, the permutations and arrangements possible in defining the forms ( $ab; cd$ ), ( $\bar{a}\bar{b}; \bar{d}\bar{c}$ ) ( $ca; db$ ) ( $a\bar{d}; \bar{b}c$ ), etc., appear, at first sight, too numerous for an easy survey. But there are relations between pairs of formally distinct ordinal functions which greatly simplify the task of following the variations that our definition permits. Of these relations, the most important is expressed by the symbolic equation:

$$(ab; cd) = (cd; ab).$$

In the ordinary notation this becomes:

$$abc + \bar{a}\bar{b}\bar{c} + \bar{a}bd + \bar{a}b\bar{d} = acd + \bar{a}\bar{c}\bar{d} + bc\bar{d} + \bar{b}\bar{c}d.$$

The verification of this latter equation requires only a very simple computation. But the property expressed is especially characteristic of the ordinal functions. In view of the solution above given in case of an equation whose left-hand member is an ordinal function, it may require but a little reflection to see that the transitivity of the illative relation, the theory of elimination, as it forms part of the theory of logical equations, and consequently the ordinary theory of the syllogism, may all of them be viewed as standing in a close relation to this fundamental principle of the theory of the ordinal functions.

In consequence of the foregoing, we may now readily verify the symbolic equations

$$(ab; cd) = (cd; ab) = (\bar{a}\bar{b}; dc) = (\bar{a}\bar{b}; \bar{c}\bar{d}) = (c\bar{d}; ba) = (\bar{c}\bar{d}; \bar{a}\bar{b}).$$

The negation of ordinal functions leads to interesting forms.

If

$$g = (ab; cd), \text{ then } \bar{g} = (ab; \bar{c}\bar{d}) = (cd; \bar{a}\bar{b}).$$

For

$$g = abc + \bar{a}\bar{b}\bar{c} + \bar{a}bd + \bar{a}b\bar{d};$$

and therefore,

$$\bar{g} = ab\bar{c} + \bar{a}\bar{b}c + \bar{a}b\bar{d} + \bar{a}bd;$$

while, by the foregoing,

$$g = acd + \bar{a}\bar{c}\bar{d} + bc\bar{d} + \bar{b}\bar{c}d;$$

and therefore,

$$\bar{g} = \bar{a}cd + a\bar{c}\bar{d} + \bar{b}c\bar{d} + b\bar{c}d.$$

When we study the ordinal functions which may be derived from  $(ab; cd)$  by changing the order of the elements or of the pairs, and by introducing, in various possible ways, the symbol for negation, we find cases where two such functions are not, in general, equivalent, but become so upon condition that the elements of the tetrad  $(a, b, c, d)$  stand in some definite relation to one another. Thus let  $g = (ab; cd)$ , while  $h = (ba; dc)$ .

Then

$$g = abc + \bar{a}\bar{b}\bar{c} + \bar{a}bd + \bar{a}b\bar{d},$$

$$h = abd + \bar{a}\bar{b}\bar{d} + \bar{a}\bar{b}c + \bar{a}bc = (ab; \bar{d}\bar{c}).$$

Hence,

$$\bar{g} = ab\bar{c} + \bar{a}\bar{b}c + \bar{a}b\bar{d} + \bar{a}bd = (ab; \bar{c}\bar{d}),$$

$$\bar{h} = ab\bar{d} + \bar{a}\bar{b}d + \bar{a}bc + \bar{a}b\bar{c} = (ab; dc).$$

In consequence,

$$\begin{aligned} g\bar{h} + \bar{g}h &= abc\bar{d} + ab\bar{c}d + \bar{a}\bar{b}\bar{c}d + \bar{a}\bar{b}c\bar{d} + \bar{a}\bar{b}cd + \bar{a}b\bar{c}\bar{d} \\ &\quad + \bar{a}bcd + \bar{a}b\bar{c}\bar{d}. \end{aligned}$$

Or, more briefly stated,

$$g\bar{h} + \bar{g}h = (ab + \bar{a}\bar{b})(\bar{c}\bar{d} + \bar{c}d) + (\bar{a}\bar{b} + ab)(cd + \bar{c}\bar{d}).$$



If  $g = h$ , then both the first and the second members of this equation reduce to zero. In that case we have:  $a\bar{b} + \bar{a}b = c\bar{d} + \bar{c}d$ . This last expression is equivalent to asserting  $T(abcd)$ .

Therefore, if we transform the ordinal  $g = (ab; cd)$  into the ordinal  $(ba; dc) = h$ , by separately reversing the order of the members of the first and the second pairs of the symbol for  $g$ , while leaving all else unchanged, then the ordinals  $g$  and  $h$  can be mutually equivalent if, and only if,  $T(abcd)$ . The  $T$ -relation thus stands in close connection with the properties of the ordinal functions.

These few cases serve to give a first glimpse of the decidedly interesting properties of the ordinal functions. I omit further developments at this stage of the inquiry; but I hope to have more to say about the ordinals in a subsequent paper.

## V

### DIRECTED PAIRS, AND AN OPERATION UPON SUCH PAIRS

We are now ready to define an operation which is based upon the operations of the ordinary algebra of logic, but which is applied to a new system of logical entities.

These new entities are *pairs* of Boolean logical elements. Just as, in the familiar modern theory of the rational numbers, a rational number is defined as a pair of whole numbers, so, in the theory to which I now pass, the entities to be considered are not Boolean elements, such as  $a, b, c$ , etc., but are pairs of such elements. And precisely as, in the modern theory of the rational numbers, the pairs of natural numbers which are in question are *directed* pairs, each pair having its first and its second member, or its upper and its lower member, so, in the following theory of logical pairs, I shall deal with directed logical pairs. Let the symbol  $a/b$ , or  $\frac{a}{b}$ , be used for the directed pair consisting of the elements  $(a, b)$ , the element  $a$  being taken as the first, and  $b$  as the second member.

Our foregoing sketch of the properties of the ordinals has called our attention to the pairs of elements which are used in defining such an ordinal as  $g = (ab; cd)$ . But the pairs of which we made mention in our foregoing account of the ordinals, were not treated as pairs. The elements used entered, in a determinate way, into the definition of  $g$ . But  $g$  was itself a Boolean element. The functions in questions were Boolean functions. The elements  $a, b, c$ , etc., were treated only in so far as they were subjected to the operations of the Boolean calculus. The symbol  $(ab; cd)$  was itself a mere shorthand for expressing the rule whereby the formation of an ordinal function was guided.

But from this point onwards we are to deal with our directed pairs as new entities, and are to subject them to new operations.

## VI

## THE ORDINAL PAIR-OPERATION

Let  $a/b$ ,  $c/d$  be the symbols, respectively, of the two directed pairs  $(a, b)$ ,  $(c, d)$ . The form  $a/b$  means simply that  $a$  is taken as the first, and  $b$  as the second member of the pair  $(a, b)$ , for the purpose of the operations into which these pairs are to enter. The symbol  $c/d$  has an analogous interpretation in case of the pair  $(c, d)$ . This adoption of the symbols which are ordinarily used for fractions has in this case *merely* the significance which is given to it by the definition just stated.

Now the two directed pairs  $a/b$  and  $c/d$  may be so combined as to define, uniquely, a new pair. This pair shall be defined as the directed pair of ordinals  $g/h$ , when  $g = (ab; cd)$  and  $h = (ba; dc)$ . Let the combination in question be viewed as an operation upon the pairs  $a/b$ ,  $c/d$ . Symbolize this operation by  $\circ$ . Then

$$\frac{a}{b} \circ \frac{c}{d} = \frac{g}{h} = \frac{(ab; cd)}{(ba; dc)}.$$

It is plain that the directed pair  $g/h$  is uniquely determined by the directed pairs  $a/b$ ,  $c/d$ .

Since  $(ab; cd) = (cd; ab) = g$ , while  $(ba; dc) = (dc; ba) = h$ , the operation  $\circ$ , as now defined, is commutative. That is,  $a/b \circ c/d = c/d \circ a/b$ .

Hereupon, we come to that feature of the new operation which constitutes the first contrast by which it is distinguished both from the addition and from the multiplication of the ordinary Boolean calculus. The new operation, namely, is *invertible*. That is, given the pair  $g/h$ , and either of the pairs  $a/b$  or  $c/d$ , the other of these pairs is uniquely determined.

For from the equations

$$\begin{aligned} g &= abc + \bar{a}\bar{b}\bar{c} + a\bar{b}d + \bar{a}b\bar{d} \\ &= acd + \bar{a}\bar{c}\bar{d} + b\bar{c}\bar{d} + \bar{b}\bar{c}d, \\ h &= abd + \bar{a}\bar{b}\bar{d} + a\bar{b}\bar{c} + \bar{a}bc \\ &= bcd + \bar{b}\bar{c}\bar{d} + \bar{a}\bar{c}\bar{d} + a\bar{c}d \end{aligned}$$

we can deduce, by an easy computation, the consequences:—

$$\begin{aligned} a &= cdg + \bar{c}\bar{d}\bar{g} + \bar{c}\bar{d}h + \bar{c}d\bar{h} = (cd; \bar{g}\bar{h}) = (dc; gh), \\ b &= cdh + \bar{c}\bar{d}\bar{h} + \bar{c}\bar{d}g + \bar{c}d\bar{g} = (cd; hg) = (hg; cd), \\ c &= abg + \bar{a}\bar{b}\bar{g} + \bar{a}\bar{b}h + \bar{a}bh = (ab; \bar{g}\bar{h}) = (ba; gh), \\ d &= abh + \bar{a}\bar{b}\bar{h} + \bar{a}bg + \bar{a}b\bar{g} = (ab; hg) = (hg; ab). \end{aligned}$$

The interest of these facts is greatly increased by the consideration

that the invertibility of our operation is possible **universally** and without restriction, and can be expressed in a peculiarly simple form. Thus, if

$$a/b \circ c/d = g/h,$$

it is easy to show that

$$g/h \circ b/a = c/d,$$

while

$$g/h \circ d/c = a/b.$$

This, in fact, is precisely what is formulated by means of the four equations written above, and expressive of the values of  $a$ ,  $b$ ,  $c$ , and  $d$ .

The novelty and simplicity of the considerations here involved, make it worth while to express the facts in the form of what may be called a "Newlin-diagram,"<sup>4</sup> which brings before the eye the divisions of a universe of discourse containing four independent terms. It is well to remember, however, that any such diagram expresses a special application of the Boolean calculus, while the laws here in question hold true of the pure algebra, and are independent of all applications to "classes," to "areas," or to other special sorts of entities.

		$a$		$\bar{a}$	
		$a\bar{b}$	$ab$	$\bar{a}b$	$\bar{a}\bar{b}$
$c$	$c\bar{d}$	$\bar{g}\bar{h}$	$g\bar{h}$	$gh$	$\bar{g}h$
	$cd$	$g\bar{h}$	$gh$	$\bar{g}h$	$\bar{g}\bar{h}$
	$\bar{c}d$	$gh$	$\bar{g}h$	$\bar{g}\bar{h}$	$g\bar{h}$
	$\bar{c}\bar{d}$	$\bar{g}h$	$\bar{g}\bar{h}$	$g\bar{h}$	$gh$
		$b$			
		$\bar{b}$		$b$	

Let

$$g = abc + \bar{a}\bar{b}\bar{c} + abd + \bar{a}b\bar{d} = (ab; cd),$$

$$h = abd + \bar{a}\bar{b}d + \bar{a}\bar{b}\bar{c} + \bar{a}bc = (ba; dc).$$

The inverse operation just noted can easily be read off from this diagram. The formal analogy of our new operation, and of its inverse, to the multiplication and division of ordinary rational numbers, is, as far as it goes, worthy of notice. In case of the rational

<sup>4</sup> See the article by Professor W. J. Newlin, in this JOURNAL, Vol. III., page 539.



numbers, to divide by a rational number is equivalent to multiplying by the inverse, that is, by the reciprocal of the pair of whole numbers which constitutes the divisor. Our pairs of Boolean entities obey, with respect to our new operation, an analogous rule. The inverse of our operation is the direct operation with one of the factors of the original operation inverted, and then combined with the result of the original operation.

## VII

## THE ASSOCIATIVE PROPERTY OF THE ORDINAL PAIR OPERATION

We next come to a still more important fact. Our new operation is not only commutative and invertible, but also associative. That is, if we have given to us the three independent pairs  $a/b$ ,  $c/d$ ,  $e/f$ , then

$$\left[ \frac{a}{b} \circ \frac{c}{d} \right] \circ \frac{e}{f} = \frac{a}{b} \circ \left[ \frac{c}{d} \circ \frac{e}{f} \right].$$

The computations needed to establish this property of our operation are of necessity a little diffuse for complete statement in so summary a paper as the present one. It may be worth while, however, to give an outline of what seems to be a convenient mode of dealing with the matter, leaving to the reader the verification of the details of the computation, if he chooses to work them out. It may be remarked that, by means of a six-term "Newlin-diagram," or better by means of a pair of such diagrams, each diagram presenting to the eye one of the associations of pairs which is in question, the associative property of our operation can be made visible. But a six-term Newlin-diagram is somewhat troublesome to print.

It is worth noting, and is easily verifiable, that, if  $a/b \circ c/d = g/h$ , then

$$\begin{aligned} gh &= abcd + \bar{a}b\bar{c}\bar{d} + \bar{a}\bar{b}cd + \bar{a}\bar{b}\bar{c}\bar{d} = (ad + \bar{a}\bar{d})(bc + \bar{b}\bar{c}), \\ g\bar{h} &= abcd + \bar{a}\bar{b}cd + \bar{a}b\bar{c}\bar{d} + \bar{a}\bar{b}\bar{c}\bar{d} = (ac + \bar{a}\bar{c})(bd + \bar{b}\bar{d}), \\ \bar{g}h &= \bar{a}\bar{b}\bar{c}\bar{d} + \bar{a}b\bar{c}\bar{d} + \bar{a}\bar{b}cd + \bar{a}\bar{b}\bar{c}\bar{d} = (\bar{a}\bar{c} + \bar{a}c)(\bar{b}\bar{d} + \bar{b}d), \\ \bar{g}\bar{h} &= \bar{a}\bar{b}\bar{c}\bar{d} + \bar{a}b\bar{c}\bar{d} + \bar{a}\bar{b}cd + \bar{a}\bar{b}\bar{c}\bar{d} = (\bar{b}\bar{c} + \bar{b}c)(\bar{a}\bar{d} + \bar{a}d). \end{aligned}$$

All this may be read off directly from the Newlin diagram printed above. Hereupon we may set  $g/h \circ e/f = r/s$ .

That is,

$$\left( \frac{a}{b} \circ \frac{c}{d} \right) \circ \frac{e}{f} = \frac{r}{s}.$$

Now, by the definition of our operation,

$$\frac{g}{h} \circ \frac{e}{f} = \frac{r}{s} = \frac{ghe + \bar{g}\bar{h}\bar{e} + \bar{g}hf + \bar{g}\bar{h}\bar{f}}{ghf + \bar{g}\bar{h}\bar{f} + g\bar{h}\bar{e} + \bar{g}he}.$$

Substituting, in the right-hand member of this equation, the values of  $gh$ ,  $\bar{g}\bar{h}$ ,  $\bar{g}h$ , and  $\bar{g}\bar{h}$ , as given above, we find:

$$\begin{aligned}
 r &= (ad + \bar{a}\bar{d})(bc + \bar{b}\bar{c})e + (a\bar{d} + \bar{a}d)(b\bar{c} + \bar{b}c)\bar{e} \\
 &\quad + (ac + \bar{a}\bar{c})(b\bar{d} + \bar{b}d)f + (a\bar{c} + \bar{a}c)(b\bar{d} + \bar{b}d)\bar{f}, \\
 s &= (ad + \bar{a}\bar{d})(bc + \bar{b}\bar{c})f + (a\bar{d} + \bar{a}d)(b\bar{c} + \bar{b}c)\bar{f} \\
 &\quad + (a\bar{c} + \bar{a}c)(b\bar{d} + \bar{b}d)e + (ac + \bar{a}\bar{c})(b\bar{d} + \bar{b}d)\bar{e}.
 \end{aligned}$$

But the directed pair  $r/s$  is, as we have defined it, the equivalent of

$$\left(\frac{a}{b} \circ \frac{c}{d}\right) \circ \frac{e}{f}.$$

Hereupon let us set

$$\frac{c}{d} \circ \frac{e}{f} = \frac{m}{n},$$

and suppose

$$\frac{a}{b} \circ \frac{m}{n} = \frac{u}{v}.$$

Then, by our definition,

$$\frac{a}{b} \circ \left(\frac{c}{d} \circ \frac{e}{f}\right).$$

We have also

$$\frac{m}{n} = \frac{(cd; ef)}{(dc; fe)} = \frac{cde + \bar{c}\bar{d}\bar{e} + c\bar{d}f + \bar{c}d\bar{f}}{cdf + \bar{c}\bar{d}\bar{f} + c\bar{d}e + \bar{c}de}.$$

Furthermore

$$\frac{a}{b} \circ \frac{m}{n} = \frac{u}{v}.$$

Hence

$$u = abm + \bar{a}\bar{b}\bar{m} + \bar{a}bn + \bar{a}b\bar{n}.$$

Substituting the values of  $m$  and of  $n$ , respectively, as defined above, we discover hereupon that

$$\begin{aligned}
 u &= ab(cde + \bar{c}\bar{d}\bar{e} + c\bar{d}f + \bar{c}d\bar{f}) \\
 &\quad + \bar{a}\bar{b}(cdf + \bar{c}\bar{d}\bar{f} + c\bar{d}e + \bar{c}de) \\
 &\quad + \bar{a}b(c\bar{d}f + \bar{c}\bar{d}\bar{f} + c\bar{d}e + \bar{c}d\bar{e}) \\
 &\quad + \bar{a}\bar{b}(cd\bar{e} + \bar{c}\bar{d}e + c\bar{d}f + \bar{c}df).
 \end{aligned}$$

Rearranging this expression for the value of  $u$ , we find:

$$\begin{aligned}
 u &= e(ad + \bar{a}\bar{d})(bc + \bar{b}\bar{c}) + \bar{e}(a\bar{d} + \bar{a}d)(b\bar{c} + \bar{b}c) \\
 &\quad + f(ac + \bar{a}\bar{c})(b\bar{d} + \bar{b}d) + \bar{f}(a\bar{c} + \bar{a}c)(b\bar{d} + \bar{b}d).
 \end{aligned}$$

Comparing this result with the value above given for  $r$ , we find that  $r = u$ .

By a precisely analogous computation we find that  $s = v$ , and thus we reach the result that:

$$\left(\frac{a}{b} \circ \frac{c}{d}\right) \circ \frac{e}{f} = \frac{a}{b} \circ \left(\frac{c}{d} \circ \frac{e}{f}\right) = \frac{r}{s} = \frac{u}{v}.$$

Our operation is therefore not only invertible and commutative,

but also associative. Accordingly, with respect to our new operation, the directed pairs of Boolean entities constitute an Abelian group.

## VIII

## RESULTS

The properties of this group of Boolean pairs are sufficiently remarkable to deserve a summary statement. Each of the following propositions can easily be verified. The computations involved are, on the basis of the foregoing, all of them extremely simple. They are also, so far as I know, novel.

The system of pairs now defined possesses a unit. This unit is the pair  $1/1$ . For, by definition,

$$\frac{a}{b} \circ \frac{1}{1} = \frac{ab1 + \bar{a}\bar{b}\bar{1} + a\bar{b}1 + \bar{a}b\bar{1}}{ab1 + \bar{a}\bar{b}\bar{1} + a\bar{b}1 + \bar{a}b1} = \frac{ab + \bar{a}\bar{b}}{ab + \bar{a}\bar{b}} = \frac{a}{b}.$$

That is, whatever pair  $a/b$  be combined with the pair  $1/1$ , is left invariant by that combination under the rules of our operation.

Owing to the formal analogy between our ordinal pair-operation and the multiplication of rational numbers (that analogy, namely, of which we made mention above, in speaking of the inverse of our operation), we may treat our ordinal pair-operation as a multiplication, although I have, at present, no addition-operation to set side by side with it. Regarding our operation, then, as a multiplication, we may write:

$$\frac{a}{b} \circ \frac{a}{b} = \left(\frac{a}{b}\right)^2.$$

We may use similar expressions for higher powers of  $a/b$ , and speak of cubes, etc. Only here we quickly find ourselves limited by the interesting further group-properties of our pair-operation which may next be stated.

We have, namely:

$$\left(\frac{a}{b}\right)^2 = \frac{a}{b} \circ \frac{a}{b} = \frac{aba + \bar{a}\bar{b}\bar{a} + a\bar{b}b + \bar{a}b\bar{b}}{abb + \bar{a}\bar{b}\bar{b} + a\bar{b}\bar{a} + \bar{a}b\bar{a}}.$$

Hence

$$\left(\frac{a}{b}\right)^2 = \frac{ab + \bar{a}\bar{b}}{ab + \bar{a}\bar{b}}.$$

The square of any pair is, therefore, a pair consisting of equal terms. Each of these equals is a "prime-function," *viz.*, the function,  $ab + \bar{a}\bar{b}$ , of the members of the pair.

We therefore have, for the cube of any pair, the expression:

$$\left(\frac{a}{b}\right)^3 = \frac{ab + \bar{a}\bar{b}}{ab + \bar{a}\bar{b}} \circ \frac{a}{b} = \frac{(ab + \bar{a}\bar{b})a + (a\bar{b} + \bar{a}b)\bar{a}}{(ab + \bar{a}\bar{b})b + (a\bar{b} + \bar{a}b)\bar{b}} = \frac{ab + \bar{a}\bar{b}}{ab + \bar{a}\bar{b}} = \frac{a}{b}.$$



That is to say, the cube of any pair is the inverse of that pair. Or, if the inverse of our "multiplication" be regarded, for the present purpose, as a "division," we now observe that to "multiply" by the cube of any pair is equivalent to multiplying by the inverse of that pair, or is, in other words, equivalent to dividing by that pair. In still another expression our result is that, if  $a/b \circ c/d = g/h$ , then  $(a/b)^3 \circ g/h = c/d$ ; while  $g/h \circ (c/d)^3 = a/b$ . We next proceed to the fourth powers of pairs. We have:

$$\left(\frac{a}{b}\right)^4 = \frac{a}{b} \circ \left(\frac{a}{b}\right)^3 = \frac{a}{b} \circ \frac{b}{a} = \frac{1}{1}.$$

The last of these equations is reached as follows:

$$\frac{a}{b} \circ \frac{b}{a} = \frac{abb + \bar{a}\bar{b}\bar{b} + \bar{a}\bar{b}a + \bar{a}\bar{b}\bar{a}}{aba + \bar{a}\bar{b}\bar{a} + \bar{a}\bar{b}\bar{b} + \bar{a}\bar{b}\bar{b}} = \frac{ab + \bar{a}\bar{b} + \bar{a}\bar{b} + \bar{a}\bar{b}}{ab + \bar{a}\bar{b} + \bar{a}\bar{b} + \bar{a}\bar{b}}.$$

Hereupon, we observe that

$$\left(\frac{a}{b}\right)^5 = \left(\frac{a}{b}\right)^4 \circ \frac{a}{b} = \frac{a}{b} \circ \frac{1}{1} = \frac{a}{b}.$$

Thus the fourth power of every pair is the unit pair, while the fifth power of each pair is identical with the pair itself. The "period" or "order" of our pair-operation is five. If we conceive the system of directed Boolean pairs as transformed within itself by combining each pair with itself by means of the pair-operation, and by then passing to the higher powers, the first such transformation substitutes for each pair its square, a determinate pair of equals, whose members are each of them a determinate "prime-function" of the original pair. Next, the "cubes," which are the inverses of the original pairs, are produced. The next such transformation substitutes for each and all the pairs the unit pair. Combining this unit pair with each member of the original system leaves that system invariant.

## IX

### MODULUS PAIRS

The pair  $1/1$ , the unit pair, may be called the modulus of our ordinal pair-operation. It is evident that, whatever element  $a$  may be, the equation  $(a/a)^2 = 1/1$  is always true. That is, the modulus is the square of any pair that consists of equal Boolean elements.

Our system of directed pairs contains, however, other pairs which have the properties of moduli; for each such modulus pair may be regarded as the unit of an ordinal pair-operation whose group is the same as the one which we have just been studying, and whose properties are precisely analogous to those of the operation which we have been studying, so that all these operations are variations of a single one. The situation is briefly to be summed up as follows:

Let us consider the four pairs  $1/1$ ,  $0/0$ ,  $1/0$ ,  $0/1$ , in their relations to one another, and to the other pairs of our system.

It is easy to show that

$$(a) \quad \left(\frac{0}{1}\right)^2 = \frac{0}{0},$$

$$(b) \quad \left(\frac{1}{0}\right)^2 = \frac{0}{0},$$

$$(c) \quad \left(\frac{0}{0}\right)^2 = \frac{1}{1},$$

$$(d) \quad \left(\frac{1}{1}\right)^2 = \frac{1}{1},$$

$$(e) \quad \frac{1}{1} \circ \frac{0}{0} = \frac{0}{0},$$

$$(f) \quad \frac{1}{0} \circ \frac{0}{1} = \frac{1}{1},$$

$$(g) \quad \left(\frac{1}{0}\right)^3 = \frac{0}{1}.$$

And thus the mutual relations of the four modulus elements are stated.

But when we combine a pair  $a/b$  with each of the four moduli in succession, we get the following results:

$$(1) \quad \frac{a}{b} \circ \frac{1}{1} = \frac{a}{b} \text{ whose cube is } \frac{b}{a},$$

$$(2) \quad \frac{a}{b} \circ \frac{0}{0} = \frac{\bar{a}}{\bar{b}} \text{ whose cube is } \frac{\bar{b}}{\bar{a}},$$

$$(3) \quad \frac{a}{b} \circ \frac{0}{1} = \frac{\bar{b}}{a} \text{ whose cube is } \frac{a}{\bar{b}},$$

$$(4) \quad \frac{a}{b} \circ \frac{1}{0} = \frac{b}{\bar{a}} \text{ whose cube is } \frac{\bar{a}}{b}.$$

If, hereupon, we ask what directed pairs can be formed from a given pair  $a/b$ , by considering the four Boolean elements  $a$ ,  $\bar{a}$ ,  $b$ ,  $\bar{b}$ , and by treating their various pairs as directed pairs, we see that the foregoing table of eight directed pairs contains all of the possible combinations, and shows how all the eight can be formed from any one of their number by using the two operations of applying the four moduli, and of raising to the third power.

But the processes in question can be greatly simplified by considering that all the four moduli can be derived from a single one of their number, by merely using our ordinal pair operation. The modulus chosen for this purpose may be either  $0/1$  or  $1/0$ , at

pleasure. Thus, if we begin with  $0/1$ , we derive the other moduli simply by considering the powers of  $0/1$ . For we have:

$$\left(\frac{0}{1}\right)^2 = \frac{0}{0}; \quad \left(\frac{0}{1}\right)^3 = \frac{1}{0}; \quad \left(\frac{0}{1}\right)^4 = \frac{1}{1}.$$

Starting with any pair  $a/b$ , and with the single modulus  $0/1$ , we can therefore form all the derivative pairs  $\bar{a}/b$ ,  $a/\bar{b}$ , etc., merely by repeating the processes of combining with the modulus, and of raising to powers.

It is possible, however, to define a new operation such that one of the moduli, say  $0/1$ , is the unit pair of this operation. The latter will then be derived from (and in essence equivalent to) our present ordinal pair-operation. Let us use  $\cup$  as the symbol of the new operation whereof  $0/1$  is to be the unit pair. That is, let us require an ordinal pair-operation  $\cup$  to be defined such that  $a/b \cup 0/1 = a/b$  whatever pair  $a/b$  may be. To this end we have only to define  $\cup$  by the equation

$$\frac{a}{b} \cup \frac{c}{d} = \left(\frac{a}{b} \circ \frac{c}{d}\right) \circ \frac{1}{0}.$$

For then

$$\frac{a}{b} \cup \frac{0}{1} = \frac{a}{b} \circ \frac{0}{1} \circ \frac{1}{0} = \frac{a}{b} \circ \frac{1}{1} = \frac{a}{b}.$$

The new operation will be so related to the old that, if  $a/b \circ c/d = g/h$ , then, by definition,  $a/b \cup c/d = g/h \circ 1/0 = h/g$ .

It is plain that by the use of the modulus element, and by raising to powers, all the results of the new operation  $\cup$  can be stated in terms of our foregoing operation  $\circ$ , and conversely. The only novelty of the operation  $\cup$  will, therefore, depend upon its choice of one of the modulus elements as its special unit.

The four moduli of our system of directed pairs are themselves pairs, and are not ordinary Boolean elements. They serve to give to the whole system properties that I believe to be not only of interest in themselves, but of no small promise for the future. In any case, here is a definite extension of the Boolean calculus, and a definite and new introduction of group-theory into this realm of the algebra of logic.

I must leave to later papers the lessons to which our study points the way. They will concern questions which I believe to be of wide philosophical bearing.

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## DISCUSSION

## AN ANSWER TO PROFESSORS SHOTWELL AND HOCKING

THERE appeared a short time ago in these pages<sup>1</sup> two reviews of my recent book,<sup>2</sup> by Professors J. T. Shotwell and W. E. Hocking, respectively. The former was evidently interested chiefly in the half of the book dealing with origins, and the latter chiefly in the half treating of the future of religion and of the relation of psychology to theology and metaphysics. I am indebted to these gentlemen for their appreciative comments and helpful criticisms. In several instances, however, I have not been able to yield to their arguments.

Professor Shotwell regrets that I cut off the evolution of gods from what he terms its "protoplasmic base," namely, *mana*, and he affirms that in the literature of ancient Rome one can actually trace *mana* passing into gods. My reading of W. Warde Fowler, to whom I am referred as to one offering the proof of that assertion, has not convinced me that *mana* as such passes directly into gods. That which seems to me established is that before they were personal divinities, the numena of Rome were impersonal forces. The data used by Fowler makes it further highly probable—were I better informed I might have to say "certain," instead of "probable"—that functions originally discharged by the impersonal numena, or natural phenomena in which this power found expression, came to be referred to a personal power, and this without change of name. With these two conclusions my book is in agreement. I have insisted upon the probable antecedence of the belief in impersonal power or powers, and I have put down the personification of natural events as one of the possible sources of the belief in unseen personal beings.

My knowledge of Roman anthropology is very incomplete, but I may be right in thinking that the old Romans believed in the existence, by the side of their impersonal "deities," of spirits immanent in objects and conceived of as anthropopathic, if not as anthropomorphic.<sup>3</sup> I do not know that these spirits have been traced back to *mana*. Are they not, some of them at least, human, souls, ghosts, originating in the observations of dreams, swoons, echoes, and like phenomena? And, if it should be said that these spirits were not gods and did not become gods, whereas the numena were or became gods, I should retort that even though it should be so among the Romans, it may have been otherwise among other peoples. There are facts which lend support to this opinion.

<sup>1</sup> This JOURNAL, Vol. X., pages 326 and 328.

<sup>2</sup> "A Psychological Study of Religion: Its Origin, Function and Future."

<sup>3</sup> See Fowler, "The Religious Experience of the Roman People," page 145.

Whatever may be true of the Romans need not be true of all other peoples. One must learn to bear in mind in the discussion of social origins that if individuals differ from each other in far-reaching particulars, the same is true of peoples. Different contingencies and peculiar endowments lead in religion to diversities of origin and of form. Whatever may be the truth concerning the origin of Roman divinities, it has not been shown, so far as I know, that ancestral gods such as the Chinese, Japanese, and Hebrews worshiped from time immemorial, or the Heroes to which the Greeks offered a cult anterior to Draco's Laws, have been traced back to *mana*. These gods proceeded directly from human beings.

I did not affirm that all the unseen personal powers are deities, *i. e.*, objects of religious worship. In a chapter entitled "The Making of Gods and the Essential Characteristics of a Divinity," I attempted to show why some unseen beings became gods and why others remained outside organized religion. I am sorry that Professor Shotwell should not have thought this chapter adequate. I regret also that he should persist in holding the opinion that "the one common denominator of religion is mystery." The first two chapters of the book under review show, I still think, that that opinion should be set aside. I like to believe that the reviewer has passed lightly over the second chapter. The element of mysteriousness is a *usual*, but not a *necessary* ingredient of religion; and it is found also outside of religion, for instance, in magic. But even though it were the exclusive and constant accompaniment of every pulse of religious life, it would not be its most distinctive characteristic. Religion is a form of behavior, aiming at the gratification of impulses and desires, in a specific way. It is this specific way, and not awe or mysteriousness, which is the characteristic distinctive of religion.

Professor Hocking's review is one that might well gratify even an exacting author. I can not, however, accept his main criticism. It is directed against the rôle I ascribe to psychology in providing the proof of the objective existence of the God of Christianity. After establishing (pp. 207-268) by means of a large number of quotations drawn from representative theologians that the strongest contemporary theological movement wishes to base theology upon facts of "inner experience," and claims for theology independence from metaphysics, I say, under the heading, "The Task of Psychology in the Study of Religious Life": "It is conceivable that in accomplishing this task the psychologist may encounter phenomena transcending what he can explain by the causes already known. So-called premonitions, clairvoyance, telepathy, sudden moral conversions, and mystic illuminations might, for instance, baffle his

efforts at explanation. And it might be claimed that the course of historical events testifies to a divine action" (p. 269). That the empirical theologians hold (that is a necessary part of their system) to the intervention of God into naturally determined phenomena, I had already shown sufficiently clearly. I added, nevertheless: "Dr. Reinhold Seeberg, professor of theology at the University of Berlin, maintains that certain facts of history 'certify to man the operative presence of God'; 'these facts are *distinct from the common or regular connection of events*. They are in themselves *characteristically marvelous*, or they are so constituted that man is through them made aware of the presence of God, and in them feels the power of God.'" Another professor of theology whom I have also quoted (p. 241) teaches that "*God can excite new centers of association of ideas, can arrest old associations.*" When confronted by these affirmations, a question arises: "Who are those competent to determine whether an action such as these men believe possible has actually taken place?" My answer was, "it is for science [psychology] to show that any one of these possibilities has become at a particular time a reality" (p. 270). I might have added that the task of separating the "naturally" from the "divinely" conditioned is difficult enough to tax the best equipped psychologist.

Professor Hocking must have, it seems, somewhat lost sight of my argument, otherwise he would not have written: "Does the author seriously mean that we should refer to God those mental states which psychology at any time fails to account for? Is God supposed, then, to do only what natural law leaves undone? Are we not claiming too little for our science of psychology? I would rather say that when we regard our own mind as a succession of "states" having "causes," then everything in it without exception must belong to psychology: there is no conceivable residue which the science could hand over to anything except to its own unfinished investigations. Give all to psychology, and then let us be clear enough to see that the question whether a God is at work in those natural laws, or whether these laws in some mysterious fashion are working themselves, has not been so much as touched on."

I agree completely with Professor Hocking: psychology "can say nothing of total and ultimate causes." Nowhere in my book have I expressed a different opinion. If my reviewer thinks otherwise, it is because he forgets the pregnant distinction which it is one of the main purposes of Chapter XI. to make, namely, the distinction between the Absolute Reality and the gods of the religions, and in particular that of Christianity. The God of Professor Hocking can not be "located" by psychology; but that Being is not the God addressed in the Christian books of devotion. Whereas, the God in



whom the theologians I have quoted believe, can, by definition, be "located" in human experience; but that God is denied by Absolute Idealism. The historical religions would all cease to exist if their anthropopathic gods were replaced by the Metaphysical Absolute.<sup>4</sup> The affirmation of Bradley may not be gainsaid: the historical religions demand "a person in the sense of a self, amongst and over against other selves, moved by personal relations and feelings toward these others—feelings and relations which are altered by the conduct of others. And, for their purpose, what is not this, is really nothing. . . . Of course, for us to ask seriously if the Absolute can be personal in such a way, would be quite absurd." I do not know that Professor Hocking is of another mind. I think not. He will, in any case, admit that as I was not speaking of the divine Reality of Metaphysics, but of a sympathetic Being *known through his direct action in consciousness*, I was not concerned with "total ultimate causes," but only with the gods of religion, *i. e.*, beings arising from an induction upon particular parts of the "inner life," and therefore entirely within the domain of science.

To believe in God's existence because of a particular emotion, or of a particular idea or vision, is a mental process of the same species as the one which leads certain persons to the belief in spirits when they hear rappings in the wall, or when they are favored with "apparitions." Beliefs *thus produced* fall under the criticism of psychology.

If theologians turn away from metaphysics, it is because metaphysics does not provide them with the God they desire, a God making possible the Christian religion. One of my purposes in the chapter mentioned was to force upon them one or the other horn of the dilemma in the presence of which they find themselves: either return to metaphysics from which you can not get what you want, or let science do the work which you are hardly willing to perform, and abide by the consequences.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Thought and Things, or Genetic Logic.* Vol. III. *Real Logic* (Part I.). *Interest and Art.* JAMES MARK BALDWIN. London: George Allen and Company; New York: The Macmillan Company. 1911. Pp. xvi + 284.

This is a continuation of the author's study of logic from the knower's point of view. It is the genesis of "objects" and of the forms of our

<sup>4</sup> See pages 245-255.

knowledge of objects, that the work attempts to describe. The first volume was entitled "Functional Logic, or Genetic Theory of Knowledge," and the second volume, "Experimental Logic, or Genetic Theory of Thought." In the first volume the author deals with what he terms the pre-logical cognitive functions, and in the second with the logical cognitive functions. In the present volume the conclusions of the other two receive restatement in Parts I. and II. "with a view to their bearing on the problem of reality"; the "logic" of "affective" experience is discussed under the title, "The Logic of Practice," in Part III.; "Aesthetic Experience" is discussed in Part IV.; the "Modes of Immediacy" are presented in Part V.; while a further brief part proposes the new word *Pan-calism* (from the motto of the work as a whole, τὸ καλὸν πᾶν) as a name for the author's philosophy and projects the programme of another volume, yet to appear, which will complete the work.

In brief outline the argument of this third volume is as follows: We begin with the dualism (emphasized in Volume II.) of the actual and the imaginative, content and control, knowledge and semblance,—“this is the universal and ever-present contrast in the meanings of cognition.” Every actual “thing” must have both renderings. “Belief motives make-believe and make-believe engenders belief.” The imaginative rendering is always instrumental to the actual and the true. “We make-believe in order that we may believe.” Truths are simply confirmed imaginings, established prospectings. “The two controls (the inner and the outer) are now adjusted to each other through the mediation of ideas or thoughts.” The instrumental is therefore not truth, but the imagination of something that may become truth. When we say that truth itself is instrumental, “we are not careful enough.” Imaginative constructions, on the other hand, are personal and prospective, embodying a new moment of personal intention, and they are, as such, neither “common” nor “general.”

But to what end or ends is the imaginative instrumental? To two ends; namely, to the theoretical end which is “complete knowledge,” and to the practical end which is the “good,” “results which may in some way minister to the advancement of appetite, affection, disposition, conduct,” “satisfactions or working practical effects.” Hence arises the question whether these two ends exhaust the cases, “whether there are other types of apprehension which either set up still further ends, or in some way reduce or reconcile the duality disclosed by these two?” To this question Baldwin replies, “There is a type of imaginative cognition, I wish at once to say, that does not allow of description under either of the two foregoing headings; a type which is motivated not by the interest of completeness of knowledge or thought, nor yet by the interest of seeking satisfactions or working practical effects. There is a way of treating a content, usually and properly called ‘esthetic,’ that we may describe as both *over-logical* and *over-practical*, as not being strictly either of these, although involving both of them” (p. 13). “The outcome of our investigation is that in the esthetic mode of experience so defined, we have the only inkling of the way that the self-reality of inner control which is the postulate of the

practical and the worthful, and the thing-reality of external control which is the presupposition of knowledge and truth, *can in the process of experience come together after having fallen apart* in the development of cognition."

The last statement may be regarded as the main thesis of this third volume. To establish it involves an investigation of interests, an answer to the questions why we are interested in the objects of practical knowledge and in those of theoretical knowledge. The author's answer to these two questions is one and the same. We are interested in these two types of knowledge at bottom because of a profound esthetic impulse which finds satisfaction now in practical knowledge and now in theory. Hence the fundamental categories of the ethico-political consciousness and the fundamental categories of the scientific consciousness, alike, are esthetic. Both types of consciousness and experience present a unity in manifoldness of the esthetic type. Both are comprehended in a whole beautiful which is known in "contemplation." "The object of contemplative interest is not only an object, but an object that embodies and completes the self. The self is realized in it, and the experience becomes one that may be called absolute in certain well-defined senses." This experience, however, is never comparable to the Hindu Nirvana, "it is never a state of pure absorption and loss of personal consciousness in an 'ecstasy' of feeling. . . . It absorbs the object in the self, which becomes the principle of realization of both knowledge and will; at the same time that, as being a state in which the dualistic terms are merged, it has the immediateness of feeling." This esthetic contemplation is elsewhere spoken of as a type of imagination along with the theoretic and practical. Again, the terms intuition and sympathy are used to express aspects of the esthetic experience, as the terms completeness, perfection, and uniqueness express aspects of the beautiful whole. In the beautiful the self finds its final fulfilment and profound satisfaction.

It is the self-interest which gives *a priori* universality and unconditionally imperative character to the moral obligations which get their content from the experienced consequences of conduct (pp. 102 ff.). And it is the same self-interest which through imitation and self-exhibition gives significance to the various forms of art (pp. 225 f. et a.). In a section on the correlation of practical and theoretical knowledge, the text maintains that the practical and the theoretical are, alike, knowledge, and that therefore the fundamental logical considerations that apply to the one apply to the other also (pp. 106 ff.). When we sympathetically contemplate the good we find it to be the complement and fulfilment of the self just as when we thus esthetically contemplate the true.

In a section on "Modes of Immediacy," three distinct types are distinguished (p. 231), namely, the immediacy of primitive sentience, "pure experience" or feeling; the immediacy of completion or "transcendence" where purposes are fulfilled and the mystic sinks into his ecstasy; and the immediacy of "reconciliation" where the dualisms of truth and value, means and end, self and the external world, terminate,—an esthetic and



supra-rational coincidence of opposites such as Nicholaus of Cusa perhaps regarded as our final intuition of the real. It is of course the latter immediacy which Professor Baldwin regards as the reconciliation of the practical and the theoretical, the inner and the outer, the worthful and the truthful. This leads to the definition of esthetic immediatism,—what Baldwin once called estho-monism,—and the invention of the name Pan-calism for the doctrine that “esthetic experience presents the profounder significance of which truth and utility (the theoretical and practical) are partial and immature factors. The intuition of reality reached in esthetic contemplation preserves all the meaning of fact or truth except its externality to experience, and all that of use or worth except its subjectivity in experience; thus essentially removing from the constitution of the real the opposition of inner and outer, subject and object (p. 256). “Again, it preserves all the meaning of what is established, the ‘is,’ except its mere actuality, and all that of the desirable, the ‘ought,’ except its mere ideality; thus showing that the dualism of the actual and ideal is not intrinsic to the real” (p. 257).

Such, in outline, is the doctrine of this volume. The intellectual project of the work is most interesting. We have great confidence in Baldwin’s viewpoint, his way of reaching a statement of the problems of contemporary philosophy, and also in his genetic method of investigation. But we find serious difficulties in some of his solutions. As I have elsewhere indicated, it seems to me that the dualism of inner and outer controls, the ego and the external world, is a presupposition of Baldwin’s entire treatment of cognition. He has not shown how this dualism results from the growth of the cognitive functions. And, consequently, his esthetic experience, like Kant’s purposive *Urtheilskraft*, can have only phenomenal validity.

Again, if esthetic contemplation is a form of imaginative cognition, and the imaginative is always instrumental (as the work maintains), it would seem that the dual end to which it ought to be instrumental, since it in a way solves and comprehends the practical and theoretical forms of imagination, is practical and theoretical knowledge. In other words, the limitations which the book ascribes to these two forms of knowledge ought to be predicable of esthetic contemplation. It can be said in reply that the latter is a form of immediacy, while practical and theoretical knowledge are mediate. So the author teaches. But, as a form of immediacy, it is just feeling, a sense of satisfaction or wholeness, and from this point of view, the author’s esthetic absolute differs only in name from the absolute of Mr. Bradley,—unless Baldwin means that this esthetic immediacy is merely the various immediate experiences of different human beings, in which case we have a reassertion of Romanticism. Esthetic contemplation is (1) a “type of imaginative cognition,” (2) a “mode of immediacy,” and (3) a sort of mystical union of opposites possessing what might be called ontological validity; and we find it impossible to unite these characterizations in an intelligible concept.

Again, the distinction between what the book calls practical knowledge

and theoretical knowledge is most vague. The characterization of the former is to the present writer exceedingly unsatisfactory. Does Baldwin mean that *practise* can be reduced to terms of knowledge of practise? Is the whole world of human action, the world of rights and obligations, of freedom and responsibility, a mere epiphenomenon of esthetic immediacy? Perhaps the fourth volume will discuss this question and answer it, but we find the whole treatment of "The Logic of Practice," devoted as it is to the subject of affective logic in the sense of Ribot, to be inadequate as a treatment of the logic of ethico-political values.

The entire subject of religious experience is reserved for the fourth volume, in which the meaning of the term reality is to be further investigated. We shall await with interest the appearance of that work. The method of the entire treatise is genetic, and hence different from the dialectic method of such a work as Bradley's "Appearance and Reality." Where the latter demolishes the pretensions of the intellect by an inexorable logic, Baldwin's work simply attempts to show that for the knower the results of his theoretical and practical judgments are not *absolutely* valid. Have we, then, in the work, another of the creations of the romantic spirit in modern philosophy? Assuredly, it will not be the least of them in importance.

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*History as Past Ethics: An Introduction to the History of Morals.*

PHILIP VAN NESS MYERS. Boston: Ginn & Company. 1913. Pp. 387.

The author's thesis that the philosophy of ethics "must be based on a knowledge of the facts of the moral life of the race in all the various stages of the historic evolution" is in praiseworthy harmony with the sociological attitude of to-day, but it is to be doubted whether this book is a successful presentation of that thesis. The author is a veteran writer of historical text-books, and does not seem to possess a really sociological point of view. On examination the book turns out to be based not upon the facts of the moral life, that is, upon the ethical practises of the societies discussed as related in the literature of historians, travelers, and anthropologists—the method which has made the works of Hobhouse and Westernmarck so illuminating,—but rather upon the moral codes and sacred books and philosophic theorizing of the ethicists of the ages. The book is, therefore, not a real history of morals, if by morals we mean social practise into which enters the element of choice and approval, but a compilation and summary of the moral beliefs as codified by the articulate elements of the societies. It is, in other words, a history of the moralists, rather than of morals. A true history of morals would involve much more than this; it would have to include a genetic account of the ideals in relation to the social complex, the mass realization of those ideals and their slow alteration through the ages.

The author's point of view is too static,—one might say, too ethical. For he insists upon interpreting the ideals, beliefs, and prejudices of the

ancient Egyptians, Babylonians, Chinese, Hindus, Greeks, Romans, and modern Europeans, all equally from the standpoint of the Spencerian Protestant. His approving quotation from Petrie (p. 39), to the effect that the virtues and vices of ancient Egyptian morality belong "far more to the tone of Chesterfield and Gibbon than to that of Kingsley and Carlyle" is perhaps as delicious a remark as can be found in the whole range of ethical literature. The book is too much colored by this intellectualism which has made the study of ethics in the past a branch of logic rather than of sociology. Surely a statement that "man is by nature a moral being" is not illuminating from either an historical or sociological point of view, and to say that "the discontinuance of cannibalism may with little hesitation be ascribed to the growth and refinement of the moral feelings" is about as valuable as to say that the discontinuance of the protectionist policy may be with little hesitation ascribed to the removal of the tariff on imports. These facile causal hiatuses are not untypical of the school in which the author was bred, but that was a school that was not particularly successful in deriving theories from facts. Nothing, of course, could be more important than a simply presented and truly inductive historical study of morals, but it must be written from a point of view which sees morality as a general function of the social complex rather than as an inherent spiritual force.

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## JOURNALS AND NEW BOOKS

REVUE NÉO-SCOLASTIQUE DE PHILOSOPHIE. May, 1913. *La philosophie syndicaliste et le mythe de la grève générale* (pp. 129-163): F. DE VISSCHER. - Socialism and democracy are diametrically opposed. The inspiring idea of socialism is a philosophy of action akin to Bergson's thought. *Roger Bacon et la composition des trois Opus* (pp. 164-180): P. MANDONNET. - The "Opus minus" and the "Opus tertium" are schemes of works which were never completed. Bacon has drawn from them many elements which have gone to constitute the "Opus majus." *La démonstration métaphysique du libre arbitre* (pp. 181-204): P. DE MUNNYNCK. - The faculty of will possesses, with regard to the acts dealing with a definite object, a power of determination which is called freedom. *La préparation scientifique nécessaire à l'étude de la cosmologie* (pp. 205-217): J. LEMAIRE. - For the man who wants to specialize in cosmology, a thorough study of the natural sciences is a necessary preparation. *Notes et discussions. Comptes-rendus.* Mgr. Farges, *La Philosophie de M. Bergson*: L. DU ROUSSAUX. Horten, *Die speculative und positive Theologie des Islam nach Razi und ihre Kritik durch Tusi*: J. FORGET. Marius Lâtour, *Premiers principes d'une théorie générale sur les émotions*: J. LEMAIRE. Reinhold Geijer, *Die Situation auf dem psychologischen Arbeitsfeld*: FR. FRANSEN. J. V. de Groot, *Eenige beschouwingen over "Lapsing intelligence"*: FR. FRANSEN. C. Radelet, *Études philosophiques de théodicée*:



J. FORGET. G. di Ruggiere, *La filosofia contemporanea*: F. PALHORIÈS. E. Gilsn, *Index scolastico-cartésien*: M. DE WULF. P. Coffey, *The Science of Logic*: M. DE WULF. *Chronique. Sommaire idéologique des ouvrages et revues de philosophie.*

THE PHILOSOPHICAL REVIEW. May, 1913. *New Aims and Tendencies in Psychology* (pp. 251-264): FELIX KRUEGER.—To understand the study of modern psychology, note must be taken chiefly of America and Germany. The relation of psychology to other sciences must be determined, chiefly the natural and humanistic, with, perhaps, the shattering of conventional divisions of scientific work. *Mind as Form and as Activity* (pp. 265-283): GEORGE P. ADAMS.—The relational theory of consciousness, descriptive of both absolute idealism and new realism, issues in the view of mind as form according to which consciousness is cognitive, with a resulting intellectualism. The view of mind as activity is believed to be more adequate. *Methodological Realism* (pp. 284-303): G. A. TAWNEY.—Methodological realism—methodological because it declines to give a metaphysics—can not give an empirical and thoroughgoing account of the facts of experience without modifying its two cardinal theses, the relational theory of consciousness and the externality of relations. *Discussion: Duration and Value* (pp. 304-306): JARED S. MOORE. *In Reply to Professor Schaub* (pp. 306-307): ELLEN BLISS TALBOT. *Reviews of Books*: B. Bosanquet, *The Principle of Individuality and Value*: ERNEST ALBEE. James Mark Baldwin, *Thought and Things. A Study of the Development and Meaning of Thought, or Genetic Logic*, Vol. III.: EDWARD L. SCHAUB. Max Wundt, *Geschichte der griechischen Ethik*: WARNER FITE. Otto Gilbert. *Griechische Religionsphilosophie*: G. S. BRETT. *Notices of New Books. Summaries of Articles. Notes.*

Arnold, G. F. *Psychology Applied to Legal Evidence and Other Constructions of Law*. Second Edition. Calcutta: Thacker, Spink, and Company. 1913. Pp. xi + 607. 12s.

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## NOTES AND NEWS

### LETTER FROM PROFESSOR URBAN

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

PROFESSOR SHELTON'S recent letter<sup>1</sup> deserves, in my opinion, earnest consideration. May I be permitted to say a word in favor of his proposal to simplify the statement of the Problem of Values, as presented for discussion at the next meeting of the American Philosophical Association?

<sup>1</sup> This JOURNAL, Vol. X., page 587.

And first I wish to speak of a practical matter touched upon in the letter. With Professor Sheldon I am inclined to think that the tendency toward over-organization that has shown itself recently in the proceedings of the Association is likely to hamper, rather than free, discussion. Doubtless there must be others who, like myself, have hoped to take part in the coming discussion, but have felt themselves embarrassed in seeking to express the results of their investigations in conformity with a scheme of thought foreign to their own method, and have found the results losing in naturalness and lucidity. It is even possible that there have been those in the past who have felt themselves excluded by the very definition of the problem.

For the devotion and energy of the committee all of us have, I am sure, nothing but thanks, and I wish personally to acknowledge my own indebtedness for many suggestions received from the formulation of the Problem of Values as they have stated it. I am also well aware that this formulation was meant to be mainly a point of departure for the discussion. At the same time, I can not help feeling that if we adhere too strictly to the programme, as at present formulated, the inevitable result will be to narrow the discussion in such a way that we shall finally end in going over the old ground of recent debates, and the distinctive problem of values itself, from the discussion of which some of us have looked for much light, will be relegated to the background.

With Professor Sheldon's plea for a subordination, if not elimination, of the epistemological problem, I am therefore in full accord, and I am glad to confess myself one "of the increasing number of philosophers who feel that it is not of great importance whether reality is subjective or objective, but that it is of surpassing interest to know what is the structure of reality." Precisely in this matter of "values" it seems to me there are but two ways of approach that are really significant and fruitful, and which may be expected to throw light upon this question of structure, *i. e.*, the scientific or psychological and the ontological, as Professor Sheldon calls it. The first of these has already developed its own methods and technique and may be said without serious risk of contradiction to have been fruitful in its own limited field. The second, in many respects more important problem, has become increasingly prominent in recent discussion, but there is still a conspicuous lack either of clear definition or consistent method. The attempt to bring order into this confusion may well occupy the energies of one meeting of the Association.

With this end in view Professor Sheldon has proposed to amend the programme in such a way as to bring out what seem to me to be the most important preliminary questions in this field. In order not to complicate the question further by presenting an analysis of my own, I prefer to subscribe myself in principle to his statement of the problem, and to express the hope that it will receive serious consideration.

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# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

### THE GENESIS OF THE CATEGORIES

#### I

PRAGMATISTS have always contended that the categories, the general and basic principles of thought in terms of which all our experience is organized, such as space, time, thing, person, number, identity, contradiction, substance, causation, and truth, are at bottom instrumental and functional. They have come into existence, persisted, and come to dominate all our thought and to appear as self-evident principles simply because they have been so eminently successful in organizing human experience and making possible the carrying-out of human purposes and solution of human problems that it now seems impossible that man ever could or would dispense with them.<sup>1</sup> While, however, pragmatists have always thought of the categories as instrumental and functional in the biological, and more particularly the psychological sense, they have hitherto been forced to describe them schematically in the terminology of formal logic as "postulates" or "hypotheses," expressions never intended to be taken literally, and merely employed in default of knowledge of the historical details of their actual psychological development.<sup>2</sup>

Recent developments in psychology and sociology have now rendered it possible to trace some of the main features of the psychological evolution of the categories from a pragmatistic standpoint. In outlining these, the writer can hardly hope that all of what he has to say will accord with all of the divergent opinions of individual pragmatists, but he trusts that it will indicate a general method of treatment of this problem that will meet with their approval. In

<sup>1</sup> This common pragmatistic doctrine is found in James's "Pragmatism" and "Meaning of Truth," and, though less explicitly, it appears in connection with the discussion of hypothesis in Dewey's "Studies in Logical Theory" and "Influence of Darwinism on Philosophy." Dr. F. C. S. Schiller, however, deserves the credit for developing this side of pragmatism most fully, in "Axioms as Postulates" (an article in a volume of essays edited by Start and entitled "Personal Idealism"), and in his recent "Formal Logic."

<sup>2</sup> Schiller, "Axioms as Postulates," pages 122-124.



avoiding polemic, he does not wish to convey the impression that he regards pragmatism as an established doctrine, but rather that constructive exposition is probably at the present time the better way of winning converts to the pragmatistic faith.

It is now safe to say that before *Pithecanthropus alalus* evolved into primitive man by learning to speak and to think, and by devising categories to assist him in the process, he already possessed anticipations of some of our categories in the organizations of his sense percepts. Many animals discriminate accurately and precisely the positions of different objects, and find their way home over long distances of space and during considerable time intervals. As no one would credit animals with the possession of the categories of thought, this capacity must be attributed to the nature of their sense percepts and coordinated motor responses. We must also credit to animal perception the capacity to discriminate between animate and inanimate objects, since they manifest a mechanical mode of behavior toward the latter which is in sharp contrast with the anthropopathic behavior exercised toward other animals and toward human beings.<sup>3</sup> In a certain sense, therefore, the distinctions involved in some, at least, of the categories, *viz.*, space, time, thing, and person, are present in the sense percepts of animals. It is reasonable to suppose that if it were possible to eliminate the thought elements that are fused with immediate sense perception in human adult experience that we should find similar qualities or relations or elements or functions—call them what you will—in the pure percepts of human beings. However this may be, it is clear that historically and phylogenetically perceptual elements anticipatory of some of the categories existed prior to the genesis of thought.

What is the functional significance of these perceptual elements from the point of view of pragmatism? It is clear that their pragmatic significance is different from that of the categories. Though instrumental, they are so in a different sense. These perceptual elements have persisted because they are functional in a strictly biological sense. Due originally to spontaneous or Mendelian variations or what you will, the individuals whose behavior was perceptually organized in terms of them were better equipped in the struggle for life, and so survived as a result of natural, or perhaps of organic, selection. The perception of things or objects is functional in a second sense, also. What, for the same animal, would be one object upon one occasion might be several objects upon another occasion. For instance, a bunch of grapes might be perceived as a single object by a hungry monkey if he could grasp them all at

<sup>3</sup> J. H. Leuba, "A Psychological Study of Religion," New York: 1912. Chap. III., and the literature therein cited.

once, whereas they would be separate objects if he could only pluck them one by one through the bars of his cage. What will be perceived as a thing or object, therefore, varies according to the practical demands of a situation.

These perceptual anticipations as they exist in animals differ from the categories of human thought in two very important respects. In the first place, while the animal can pass successively from one place to another in the direction of home, guided by successive sense stimulations, and in this sense the space of its past experience is organized for it into a system, this system is probably never present before its imagination in ideas subject to its control, so that it can pass freely from one image or idea to another.<sup>4</sup> Still less, in the second place, can it communicate or cooperate with others, except to the extent that they are likewise stimulated by successive sense stimuli evoking similar reactions. Animals do not form societies in the human sense.

Men, then, notably differ from animals in the possession of free images and ideas and in the capacity for social life. When primitive men first came into possession of free images and ideas, and, as gregarious animals, felt the impulse to use these images and ideas to serve the purposes of their social life, they were confronted by the problem that provoked the formation of categories.

The most convenient example for us to consider first is the category of space. Newly possessed of free images and ideas, primitive men were conscious, not only of the objects of immediate sense perception at a given moment, but also of images of all sorts of other objects which they had perceived before, or only dreamed of or otherwise imagined, but which had spatial characteristics like perceived objects. Hence, some method of control of these images, so that they might be consciously thought of in relation to objects immediately perceived, became necessary. Moreover, this method of control must be some common standard or medium, the same for every one in the tribe, so that all could understand one another and cooperate for common purposes. The most available cognitive material which they had was utilized for the purpose, and, in the case of various native races reported to us, this was the tribal camp. If the camp consisted of four divisions, each allotted to a clan or phratry, the rest of space was divided into four grand divisions, each beginning with the space occupied by one of the clans and extended outward indefinitely, and associated in some sense with the clan

<sup>4</sup> At least beyond a very limited extent. Cf. S. J. Holmes, "The Evolution of Animal Intelligence," Chaps. XII. and XIII.; M. F. Washburn, "The Animal Mind," Chaps. XI. and XII.

totem.<sup>5</sup> The Zuñi Indians have a very elaborate conceptual space divided into seven divisions corresponding to the original seven clans of their pueblo.<sup>6</sup> When the tribal camp is circular in form, as among the Zuñis, the whole of space is an immense circle. The original significance of the Latin *mundus* and the Greek *κοσμος* seems to have been similar in principle.<sup>7</sup>

The differentiation of numbers above three or four is preceded by the use of concrete objects and portions of the body in calculations, a fact indicating that numbers are devices invented after men already knew how to calculate in order to facilitate the process.<sup>8</sup> Both localities and numbers begin by being discrete, each with its own sacred and magical attributes, and space and numbers only become abstract and homogeneous media of thought with later evolution. So we may claim that the evolution of these categories has gone on strictly in accordance with pragmatic principles. As situations and emergencies arose out of the conditions of social life, the categories were revised and further differentiated in order more effectively to solve social problems and realize social ends. Their thoroughly functional and instrumental nature is evident.

The social and instrumental origin of the categories explains why the evolution of some of them was retarded in a manner that would otherwise be unaccountable. Animals consistently distinguish between animate and inanimate objects in their perception, and adopt different modes of behavior accordingly. Why was primitive man unable to maintain this distinction in his sense perception, and to extend it to his free images and ideas, and organize his categories to that end? The problem of utilizing memory images of objects in their absence from perception would seem at once to have suggested comparison, and to have developed the laws of identity and contradiction. Such would doubtless have been the case had the evolution of the categories come directly from mechanical behavior, as we should logically suppose to have been the case. But, as a matter of fact, the evolution of the categories came rather illogically, following a devious route beginning with anthropopathic behavior. This was because primitive man's chief interest and attention was not so often directed towards inanimate as towards animate objects. The latter affected him in more different ways, and more intensely. Had

<sup>5</sup> Durkheim and Mauss, "Année Sociologique," VI., page 47 ff.; E. Durkheim, "Les formes élémentaires de la vie religieuse" (Paris: Alcan. 1912), pages 15-17.

<sup>6</sup> F. H. Cushing, "Zuñi Creation Myths," in 13th Report of the Bureau of American Ethnology.

<sup>7</sup> F. M. Cornford, "From Religion to Philosophy," page 53.

<sup>8</sup> L. Lévy-Bruhl, "Les fonctions mentales dans les sociétés inférieures," Chap. V. Paris: Alcan. 1912.



interests involving mechanical behavior prompted man to attend chiefly to inanimate objects he would soon have learned to reckon upon the constant appearance of the same properties of objects under the same conditions, and to expect these to reappear to all other persons under the same conditions. Animate objects, however, do not reveal any such uniformities in so obvious a manner. There is not perfect uniformity in their behavior; their moods change, and some persons know things that others do not. So savages believe in metamorphoses, and in the existence of properties and objects that can be perceived only by certain persons, or by none at all.<sup>9</sup>

This explains why many savages, if they possess them at all, do not employ the principles of identity, contradiction, and causation in a manner at all comparable with ourselves. Instead, they make very large use of another category which Professor Lévy-Bruhl calls "the law of participation"<sup>10</sup>—a kind of mystical category, partly cognitive, but partly affective, which it is difficult for us with our more differentiated and better controlled cognitive and affective states to understand. It is perhaps better to describe this law than to attempt to define it. Totemism furnishes illustrations of it. The Bororó of Brazil identify themselves with their totem, and see no difficulty in affirming that they are at the same time human beings and araras, a species of birds with red plumage. The *intichiuma* ceremonies of the Australian tribes reported by Spencer and Gillen imply a communion of essence in which the actual individual, the ancestral being which lives in him, and the animal or vegetable species which is his totem, participate. Whereas for our mentality these are necessarily three distinct realities, for the Australian the three are one only at the same time that they are three. The very word "to be" has a different meaning at this stage of culture from what it has for us.<sup>11</sup> For these savages it envelopes representations and the consciousness that experiences them in a kind of participation *felt* and *lived* rather than thought. It renders it possible for objects to be, in a manner hard for us to grasp, at the same time themselves and something other than themselves. The opposition between one and many, the same and the other, does not at this level impose the necessity of affirming one of these terms if one denies the other. At a higher level, after the felt unity of the tribe with the totem group has become less intense, and the principles of identity and contradiction more as we understand them, begin to emerge, we find tribes reported that are unable to believe that they can at one and the same time be men and totemic plants and animals.

<sup>9</sup> Lévy-Bruhl, *op. cit.*, pages 40-45; 58-67.

<sup>10</sup> *Idem.*, Chap. II., and *passim*.

<sup>11</sup> *Idem.*, page 94.

For them the totemic emblem has become symbolic rather than literal and some sort of intermediaries must effect the union. The participation, in other words, is *represented*, and no longer immediately felt. When the Bororó reach this stage, Lévy-Bruhl predicts that they will no longer say that they are araras, but that their ancestors were such, that they are of the same essence with the araras, that they will become araras after their death, etc.<sup>12</sup>

The functional nature of the categories is evident in this. At the lowest level, savages employ the category of participation because it meets the needs that they consciously feel, and is serviceable in satisfying them. The individual is hardly conscious of his individuality as such, but he very vividly feels his unity with his clan and totem, and the law of participation expresses his feeling vividly and completely; it "works" in the pragmatic sense. At higher levels, where use is made of representative imagery, instead of mystical feeling to express the unity of the tribe with its totem, the explanation probably is that individualism is beginning to emerge. In many relations of life individuals have now become conscious of their separate interests, while in other relations they still feel the need of vivid appreciation of their tribal and totemic unity. Representative imagery and the higher level of analytic and synthetic thinking that accompanies it can distinguish between, and at the same time conserve, diverse values that immediate feeling could only fuse and confuse. So that in changed conditions, in response to changed demands, new thought categories, like identity and contradiction, "work" better because they can organize representations, and, therefore, supplant the felt category of participation.

The social and pragmatic origin of the category of cause and effect is equally evident. At the lowest level this category is so undifferentiated that it is impossible to identify antecedent and consequent and lines of necessary connection with any certainty. A chief in the Torres Straits could not understand why, one day, he was unsuccessful in fishing. Three or four days afterward an infant and two women in the village died. In his mind this explained the matter fully, and cleared him of all blame. As Lévy-Bruhl points out, it would be impossible in this case to say which was cause and which effect, since the unsuccessful fishing was explained by the deaths, and so you might say was the effect of them, while on the other hand it preceded them as if it were cause.<sup>13</sup> All kinds of metamorphosis and action at a distance are believed in. Men can be born of rocks, stones can speak, the dead can become alive.<sup>14</sup> At

<sup>12</sup> *Idem.*, page 431.

<sup>13</sup> *Op. cit.*, pages 333 ff.

<sup>14</sup> *Idem.*, pages 518-528.

this level we have to do with a felt or confused force, sometimes called by name, *mana*, *wakonda*, *orenda*, indicating a stage in which the category of causation has not yet become clearly differentiated from the law of participation.<sup>15</sup> Professor Durkheim maintains that this felt and at the same time impersonal force must be the collective force of society projected into physical objects,—or, as I think we might put it, it is anthropopathic behavior attributed to physical objects. His argument is as follows. (1) Such an idea of force could only come from felt inner experience, since the only forces that we can experience are those that we feel inwardly. The senses only reveal phenomena that succeed or follow one another, not force passing from one phenomenon to another. (2) This felt inward force can not be the individual's feeling of his own volition, for that would not seem to him to be an impersonal force. It therefore must be the feeling of social force or pressure, which would seem to the individual to be impersonal, since it is not due to any one in particular. When the category of cause and effect finally became differentiated, antecedent and consequent became discriminated, together with force and some sort of necessary connection. The last was the authority of society over the individual. When we think how the individual in the lower races is dominated by tribal customs at every hand, customs handed down from time immemorial for which nobody is responsible, we realize that the notions of force and necessary connection could arise in this way, and make possible the notion of causation.

We may, therefore, claim that the evolution of cause and effect has been what the pragmatist would expect,—a gradual development, prompted by human needs and purposes, of devices for the explanation and control of the outer world. When the race was young it devised tools from the vague feelings that constituted most of its inner experience, and invented the category of participation, which satisfied its desires for the time; when it had become more individualistic and discriminated better its representative images, it learned to distinguish antecedent and consequent and connected the two by the only impersonal tie of relationship that it knew, and this “worked” for a long time, and still “works” for ordinary men to-day. Finally, as a feature of the exact methods of modern natural science, highly abstract quantitative conceptions have supplanted the anthropomorphic notion of a causal force or efficacy, because the former furnish simpler and more effective tools for solving scientific problems. Nothing could be more thoroughly pragmatic than this evolution.

<sup>15</sup> Cf. also Irving King, “The Development of Religion,” Chap. VI., and R. R. Marett, “The Threshold of Religion,” Chap. IV., and *passim*.



Space does not admit the discussion of other categories, such as time, substance and attribute, genus and species, which Professor Durkheim and his school have analyzed along similar lines. Enough has been said to show their general implications. It should be noted that in the use that I have made of their investigations in outlining the character of the psychological genesis of the categories from the point of view of pragmatism, I have carefully avoided making the account in any way dependent upon certain of the more controverted positions of these writers, like the doctrine of collective representations, Lévy-Bruhl's theory of a pre-logical mentality fundamentally different from our own, and Durkheim's theory that the categories are of religious origin. I have also avoided every implication of the doctrine of a social mind or consciousness existing in any sense independent of individual minds as a separate entity. Whatever may be the fate of such doctrines, the evidence that the categories have had a social origin, and that they have varied greatly in different societies and different stages of culture, seems incontrovertible. That the categories should be interpreted therefore from the pragmatistic standpoint as instrumental and functional in their nature, serving to control and govern human experience and accomplish human purposes, seems almost a corollary.

## II

It is now necessary to consider the category of truth. For, from the point of view of pragmatism, truth must also be regarded as a category. It is a schema or concept by means of which we organize our perceptual and imaginal experience in order to accomplish our ends. Its genesis can be outlined in a manner similar to the categories already discussed. Like causation, and unlike space and time, the distinction between truth and error is a purely thought distinction, not anticipated in sense perception. To be sure, animals sometimes experience perceptual illusions, but the distinction between truth and error implies some sort of norm or standard that could only have occurred to man after he was able to form judgments and make comparisons. When he was puzzled whether he could safely act upon a memory image, and decided whether or not to do so, he was consciously facing the problem of truth and error.<sup>16</sup> If the image led him to the results he desired, satisfied him, it was true; if it did not, it was false. Any sort of satisfaction following the acceptance of an idea probably made it true in the beginning.<sup>17</sup>

<sup>16</sup> Before the problem became so explicit as this, the formation of meanings must have begun in the manner described by Professor G. H. Mead, *Psychological Bulletin*, Vol. VII., pages 397-405.

<sup>17</sup> Perhaps savages who reply to a traveler's inquiry with the answer that

Very soon, however, man must as a rule in various fields of his conduct have learned to become more particular as to the kind of fulfillment an idea ought to have in order to be satisfactory. The physical environment is somewhat stiff and unyielding. Social requirements also bear heavily upon savages. The satisfaction requisite must soon have been referred to a social standard, and this must have included the other categories in the form that primitive men then possessed them. An idea to be true upon this second plane had to be verified by realizing its own intention and implications. Only on the first and lower plane can it be strictly said that "truth happens to an idea." On the higher plane the relation between an idea and its fulfillment must be more close and intimate.<sup>18</sup>

While truth, as it has been said, makes its appearance only with reflective thought, it has rather a definite instinctive foundation, more so than any of the other categories that we have considered. This is chiefly found in the instinct of curiosity and its accompanying emotion of wonder, which are prominent in the animals nearest to man.<sup>19</sup> They delight in watching whatever is strange and novel in their perceptual experience, when not restrained by some conflicting instinct, like fear. Primitive man's curiosity, no doubt, was also evoked by whatever was strange and novel in the free play of his newly acquired free images and ideas; to him, as to us, reverie must have been a source of delight, and reverie I take to be the manifestation of curiosity with reference to the free play of images and ideas.<sup>20</sup> To employ the categories in the organization of novel perceptual and imaginal material, to work out *liaisons* and participations between things, to compare one idea with another and find points of identity and contrast, to devise causal explanations of things (at first no doubt as myths)—all such manipulation of images and ideas in terms of the categories must have been a delightful sport.

To be sure, most thinking done by individuals was and is they think will please him, regardless of the facts, imagine, for the time being, that they are telling him the truth! The honest but over-enthusiastic salesman and the passionate but fickle lover are analogous cases.

<sup>18</sup> Professor Dewey's test of truth seems to me to be that of the second plane, while James's looser use of the pragmatic method corresponds to the more primitive plane. This latter has always survived to some extent, especially in the field of religion, where beliefs that would have been erroneous if tested by the standards of the higher plane have often survived, and in a sense "worked" by performing some social service. (Cf. Dewey, "What Does Pragmatism Mean by Practical?" this JOURNAL, Vol. V., pages 85-99).

<sup>19</sup> W. McDougall, "Social Psychology," pages 57-59; "Body and Mind," page 266.

<sup>20</sup> Professor Graham Wallas has convinced me of the very great importance of reverie in this connection, but it seems to me to be a mode of curiosity, and not a separate instinct or innate disposition.

prompted by other instincts than curiosity. All human instincts and sentiments on occasion demand the acquisition of knowledge (*i. e.*, the organization of percepts and images into an intellectual system by means of the categories). Very often curiosity is only the servant or auxiliary of other instincts, and, being evoked only to aid in their gratification, is easily satisfied with whatever thought material satisfies them. Such other instincts we call "practical" or "interested," in contrast with curiosity which is "disinterested." Probably there is no field of scientific knowledge or speculative thought in which the organization of images and ideas has not gone beyond the satisfaction of "practical" interests. Such truth, like all other, is instrumental and functional,—satisfying, as it does, human instinct. It is teleological in the sense that the instinct that prompts man to desire it is for his own good, and makes for his own survival; but the man devoted to research is often as unconscious of this fact as he is of the teleology of the sex instinct when he falls in love. It is "disinterested" only in the somewhat Hibernian sense that it does not subserve "practical" interests.

Since, like the other categories, truth is a social creation, it is probably safe to say that most of the content of ideas organized by modern social groups under the category of truth owes its origin to the "disinterested" instinct of curiosity. Beliefs whose origin is more "interested" as a rule are not trustworthy and do not long survive. They either bump up against stubborn perceptual facts, or they twist the categories so badly out of shape (by straining the laws of identity, contradiction, causation, etc.), that it costs too much to maintain them. So that while the thinking of most individuals at any given moment is prompted by other motives than "disinterested" curiosity, the content of the judgments that they utilize in their thinking is for the most part drawn from the storehouse of the accepted truths of their social group, and this storehouse is chiefly stocked with truths that in the first instance were the fruit of "disinterested" curiosity.

The impulse to seek the gratification of curiosity in isolation from other impulses has become fortified by a certain moral sanction. Man has learned that the sort of cognitive material that satisfies the instinct of curiosity independently can be relied on, as a rule, in the long run to satisfy other interests and impulses most completely and most socially. He therefore sometimes hypostasizes this kind of truth as "disinterested truth," "absolute truth," and "truth for its own sake." Wisdom, the mental habit or sentiment that prompts some men to seek such satisfaction along definite lines and makes them



efficient in so doing, early in moral evolution became a socially recognized virtue.<sup>21</sup>

The fact that truth is a social creation<sup>22</sup> explains various of its features. It explains why it is seemingly universal, objective, necessary, and sometimes sacred in character. It appears to the individual to be universal because it is a social possession, not his private property and not different for him from what it is for the other members of his group. It is no respecter of persons. It is objective to him for much the same reason. He has not made it; and only to a slight extent can even the greatest scientist hope to change it. It is necessary because it has all the authority of the group behind it, and the individual must submit to it, for society will tolerate no one that disregards many of its truths. Another reason why it is necessary is because most of the beliefs thought by individuals to be true have been half unconsciously assimilated by them through imitation and suggestion; and, to those who have never considered the reasons why they were incorporated into the social body of truth, they seem self-evident because no one has ever questioned them. They are often sacred, because they are assimilated under religious, patriotic, and other associations that involve deep emotional feeling and sentiment. How many Americans to-day in ordinary ranks of life know why they believe in monogamy and a republican form of government! To how many do these beliefs seem necessary and sacred truths about which it would be distasteful to argue in cold blood! Yet each of these truths is limited in its acceptance to certain social groups of a national character.

Truth to-day is of many kinds. As we have seen, it may or it may not be the satisfaction of a specific instinct or group of instincts.<sup>23</sup> There are truths and truths. In a broad way, a truth may be defined as any cognitive material that is affectively satisfying to a social group so that it may be employed as an instrument to action. Where the affective pull of "interested" impulses is strong, any cognitive material is liable to be satisfactory in this sense if it is agreeable to these impulses, and does not obviously resist organization under the categories or patently contradict sense perception. Such a social group as the Christian Scientists appears to be able to maintain beliefs that render them impermeable to a good deal of

<sup>21</sup> I have discussed the psychology of this and other virtues very summarily in an article in the *Philosophical Review*, July, 1913.

<sup>22</sup> The evidence that all the objects of thought, physical as well as mental, are social in their origin may be cited in the support of the view that truth is a social creation. Cf. George H. Mead, *op. cit.*, and E. S. Ames, "Social Consciousness and Its Object," *Psychological Bulletin*, Vol. VIII., pages 407-411.

<sup>23</sup> For a different view on this point, cf. Professor A. W. Moore, "Truth Value," in this JOURNAL, Vol. V., pages 429-436.

conflicting sense experience, and that probably come under the hoary law of participation, since they are irreconcilable with later categories. Such instances lie at one pole. At the opposite pole are the accepted principles of the more exact natural sciences, which have been clearly thought out in terms of the categories in their latest and most highly evolved forms, and have been thoroughly subjected to numerous perceptual and experimental tests. All of the accepted truths of modern society lie at one or the other of these poles or somewhere between. An adequate definition of truth must recognize these varying types. We can only deny the name truth to any accepted belief that satisfies a considerable social group by referring the belief to the standards of some other social group which we regard as superior. We may choose to reject the beliefs of the Christian Scientists because they conflict with natural science. In this case we identify ourselves with the natural scientists, choose to think in terms of their categories, and in consequence find the doctrines of Christian Science untrue. Truth, therefore, in the last analysis is what is thought to "work" because it satisfies the requirements of the highest social group to which we can appeal.

The categories, including under this term truth, have been treated as functional devices arising in human experience and aiding human societies to gain control of situations in which they find themselves so as to secure their ends. Is this not subjectivism?

It may be replied that if this conception deserves the name subjectivism, it is at least not individual, but social subjectivism. It is not solipsism, unless the Leviathan is the solipsist! The categories, as we have seen, are not the constructions of individuals. They are the accepted fundamental conceptions of an age, and only very gradually change from one age to another. They are the most permanent elements in human thought, and come to the individual with much of the universality and necessity that Kant attributed to them. It may therefore be said that the categories are real, if anything human is real. By means of them the members of human societies are able to adjust themselves to one another and to their physical environment, and to realize their purposes. They are real because they are effective instruments to action. This does not merely mean, as it seems to me, that they are real because they are postulated so valued by human beings that the latter would maintain their belief in them at whatever empirical cost, although it includes this. It further means that our experience has taught us that we may positively affirm that the universe, whatever its nature may be apart from us, is such that when human organisms come into experiential relations with it, their percepts and categories are fairly efficient in enabling them to effect an adjustment with it. It would

be too bold, however, to maintain, except as a postulate of faith (similar in principle to those of religion, though, perhaps, on the whole more consistently workable) that the categories in any constitutive or representative fashion interpret the universe as it exists apart from its interaction with human organisms. Surely the social subjectivism, if such it be, of this form of pragmatism deserves commendation for honestly confessing that there are limits to possible knowledge, and for not, like certain rival forms of contemporary philosophy, advancing specious arguments based on the impossibility of doubt, the ego-centric predicament, and the like, and claiming that our human categories are laws of things in themselves.

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## DISCUSSION

### THE LAW OF THE RESTING POINT

IN a recent paper<sup>1</sup> Dr. Hollingworth has advanced a most interesting principle of normal perception which he calls the law of the resting point. The facts he adduces in favor of this principle seem to me to be, in the main, both accurate and significant. Their bearing upon the theory of perceptive processes is less obvious than their relation to the technique of the pictorial arts; but that they do throw light upon the former, I can not but believe.

I am inclined to conjecture, though, that they do not throw the particular illumination which Dr. Hollingworth turns on. And I wish here to discuss his interpretation of his data because I believe that it supplies us with an exceedingly sharp contrast between two radically different modes of psychological explanation. The mode chosen by Dr. Hollingworth enjoys almost universal popularity to-day among psychologists; the other mode is utterly discredited. Now, I should like to make clear that, in the present instance at least, all the advantages lie with this second despised mode.

The two modes may be briefly described as follows. The accepted and orthodox one explains a process in terms of its machinery, whereas the other one explains a process primarily in terms of the situation with which the machinery has to deal. In other words, the first mode presupposes that a process is what it is because of the build of its engine; while the second mode presupposes that there is an engine which owes its character, at least in large measure, to the character of the stuff and complication which the engine encounters. Please note that both modes rest upon presuppositions. And please

<sup>1</sup> "A New Experiment in the Psychology of Perception," this JOURNAL, Vol. X., page 505.



note also that, by virtue of this fact, the scientists' ultimate problem concerns the utility of these same primitive assumptions. This should not be lost from mind, inasmuch as the champions of the first mode have the habit of urging in its favor that it is purely empirical, resting upon no metaphysical proposition.

Let us now consider Dr. Hollingworth's facts and his interpretation of them. "*To suggest activity pictorially,*" he says, "*the moving object must always be caught at an actual point of rest; to suggest pose or arrest it must be caught at a point of actual motion.*"<sup>2</sup>

"The amateur usually makes the mistake of supposing that to suggest motion, let us say the motion of a horse trotting, the foot of the animal should be represented in the middle of its course. Nothing is farther from the truth. To suggest action effectively, the foot must be caught at one of the two resting points—either at the initial point, before the beginning of the movement, or at the final point, midway between extension and return."

I am quite certain that Dr. Hollingworth has here touched upon a valuable discovery. I am equally sure that he has overlooked some important features whose omission must seriously alter the general proposition. But I shall not dwell upon the omission until I have considered the main issue. This main issue is squarely presented in Dr. Hollingworth's interpretation of his facts.

"The explanation is simple. The perception of activity is a typical illustration of the process of interpreting a situation in the light of earlier experiences, associations, and memories. The eye can not see while it itself is in motion. Vision is achieved at points of rest, at least the clearest vision is. Because of difficulties of accommodation, adjustment, etc., our clear visions of moving objects come at the moments in which the objects are temporarily at rest. Only when objects are inactive or in attitudes of pose do we ordinarily get clear visual impressions of them in the middle of a conceivable course of movement. Our interpretation of pictorial representations of objects proceeds in terms of these past experiences."

Here we find a straightforward example of the first mode of interpretation. We see clearly when our eyes are at rest; hence we perceive a moving object best when it is at rest. So far, so good, perhaps; but how about the converse instance, the perceiving of a resting object? According to the original law of resting points, we ought never have so clear a perception of a motionless object as we have of a moving one; for we must perceive the still object at a point of *actual motion*, whereas the eye must, at this moment of the object's actual motion, be at rest in order to secure a clear image. There is another way of stating my difficulty. If the eye best perceives when

it itself rests, I can understand why the moving object is most advantageously depicted (imaged) at one of its resting points; but I can not see why a resting object should not also be depicted when at rest, and by the very same arguments. As a matter of fact, I believe that it is best exhibited or fancied when it is seen or thought of in a state of rest. If the process of perceiving rest and motion is to be explained in terms of the eye machinery, ought we not say that we best perceive motion *and* rest at instants when the eyes rest? But let us do this, and Hollingworth's new law collapses. For now we must admit that the eye rests frequently in following the course of a moving object, and hence has clear visions of it during its trajectory, and hence need not wait for clarity until the object has itself reached an instant of rest.

That we do secure *clear* images<sup>3</sup> of moving things during their flights is indisputable. I have never found the slightest vagueness in those stiff and often ludicrous cinematographic records depicting the rigid, straight leg of the pedestrian or the clumsy twist of the trotting horse. I perceive the man as a walking man, the horse as a trotting horse. They are not ambiguous, they are not falsifications. And this, I take it, indicates that I do genuinely perceive men and horses at such awkward instants in their movements. Nevertheless, as Hollingworth correctly insists, these are not the postures which are most effectively chosen to illustrate, either in memory or in some artistic form, the pedestrian or the trotter. But why not? The query can best be answered after I have criticized the orthodox mode of explanation and suggested the merits of the heterodox one.

All the difficulties into which Dr. Hollingworth falls arise, I think, from his prior acceptance of modern psychology's dogma of the engine, if I may be allowed the phrase. Once commit yourself to the presupposition that the peculiarities of perceiving are due *fundamentally* to the structure of the perceiving mechanism, and there is no escape from a host of intolerable obscurities. You may, of course, safely and profitably assume that those peculiarities are, in some measure, due to this mechanism; the peril sets in only when the mechanism is looked to for the first and basic explanations of its own behavior. What this peril is, appears in the inadequacy of Dr. Hollingworth's account of the perceiving of still objects. And to shun it, we have only to choose some other primary presupposition.

Now I shall not attempt to enumerate and test all possible presuppositions, which are many. I shall merely employ one which, in my opinion, is not absolutely inadequate, but nevertheless is much more fruitful than the dogma of the engine. I choose it here because it affords the sharpest contrast to Dr. Hollingworth's explanation.

<sup>3</sup> I am here using the term "image" conventionally.

It is the quasi-rationalistic assumption already described. Let us see how it works.

The perceiving process, according to this assumption, derives its manner predominantly from the objective situation wherein the organism finds itself and toward which it "endeavors" to take a certain attitude, or in which it "seeks" to accomplish something. Now, what is the situation in the present instance? And what is to be accomplished? There is an object in motion which has been seen. The observer resolves to play a game with this object. If he is an artist, it is a two-handed game. He endeavors to accomplish two things at a single instant, *i. e.*, give a *single static* image of it. And this single static image shall be that one which *most effectively* represents the object and its motion to another person. You must observe carefully these two rules of the game. It is their combination which gives us the clue to the technique of both imagery and pictorial art.

The artist's question then is simply this: which single static image is most successful in suggesting the object and its particular motion to a second person? And the answer is to be found in some of the *facts* which Dr. Hollingworth adduces, but not in the theory which he adds to them. The moving object is very frequently (but not always) best depicted at an actual point of rest; and the resting object is most forcibly exhibited not at a point of *actual* motion, but at a point where the object would be in motion, *were it not interrupted*. Dr. Hollingworth's illustrations of this, drawn from classical art and from his valuable and original laboratory experiment, confirm so conclusively the account I give that I can only refer the reader to his article.

How, now, shall the explanation run? Why, very simply, indeed! *Effective imagery, mental and artistic alike, follows the real situation most faithfully, under the rules of the game.* The first rule of the game is that one and only one image shall be used to represent the object. Well, if the image must be one and therefore static, is it not evident that the one image that most faithfully and successfully represents a moving object would represent the object at that point where it is *really* at rest? That image does less violence to facts. The pedestrian's leg is approximately still at the instant of touching or of leaving the ground; and it is still at no other moment. To represent the leg at another instant, then, would be to represent it as still when it is really moving. Such a picture might be *clear*; indeed, it almost always is. But it would not be *effective*, because it would falsify the objective situation.

Likewise with the depicting of a still object, though here another consideration occasionally enters. If you depict a horse with both forelegs in the air and the neck low, you give a picture which falsifies; for the animal in this position is really galloping full tilt. We doubt-



less see horses in that position; but *when we do, we do not see them halt there*. Hence it is that, when we see a picture of a horse at such an instant of flight, we see thwarted motion; and this is the most aggravated variety of rest. It is not simple repose. It is the immobility of terrific tensions in equilibrium.

Several very interesting matters involved in this matter deserve discussion; and not the least among them is that of the hurdler. I think that many observers will agree that the instant of clearing the hurdle is most effective in depicting the activity. But this instant is one of motion, not of rest. How then shall we square it with the explanation just advanced? I think we must say that, under the rules of the game, this is a type of activity which can be adequately depicted by no *real* instant of rest, and hence the most characteristic instant of motion is chosen. But I do not wish to argue the point now. I desire only to emphasize what I regard as the most important theoretical consideration involved in Dr. Hollingworth's suggestive study. The dogma of the engine, so highly favored by our contemporary psychologists, drags its followers into grievous perplexities and artificial conjectures. The derided dogma of the adaptive agent, on the contrary, supplies us with a simple common-sense explanation in a host of cases, and, what is much more decisively in its favor, it can explain those very behaviors of the engine which the adherents of the other dogma use to explain such things as the perception process.

This advantage is remarkably clear in the present instance. Dr. Hollingworth explains the law of the resting point by the pretty well established facts that the eye moves in jerks while following a moving object, and that clearest vision occurs at the rest instants. But the psychologist who accepts the dogma of the adaptive agent can explain these explanations. Suppose that there is an environment. Suppose that in it there are things moving about in physically continuous paths. Suppose that the space of these paths is essentially as the ordinary man and the geometer find it to be. Suppose that light is, too. Then a multitude of propositions follow. Complete definition in a field involves and depends upon a unique determination in space and time; an object, in other words, is least ambiguous (*ceteris paribus*) when its locus and moment are given. This is true not merely in abstract calculation, but none the less in perception. Therefore, the eye sees most determinately when it sees an object at a single place in a single instant. Now suppose that the eye follows a moving thing. The eye does not know in advance the thing's path. In fact, the eye knows nothing whatever. How, then, could it follow continuously the object? The object advances from  $s$  to  $s'$ , being in  $s$  at  $t$  and in  $s'$  at  $t'$ . What advance shall the eye make? Shall its

line of vision go from  $s$  to  $s'$ ? It may happen to, but certainly this move is only one of indefinitely many possible moves. Mathematically, the chances of its moving to some other point are indefinitely great. And logically there is no reason why the move should be from  $s$  to  $s'$ . Thus it comes about that *the eye actually follows a trajectory in a series of discontinuous tangentials and by the well-known method of trial and error*. As the object moves, the line of vision shifts, usually to some point whither the object does not go. In a very short time this deflective move is checked by off-center vision of the object, as it progresses in some other direction than that taken by the eye. And the eye returns to catch the trial.

All this, I would urge, is the only conceivable mode of perception, if the objective situation really is as geometry and physics and biology describe it. And it explains both the eye's behavior and our preference for the *real* resting points as symbols of a moving thing.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Fortschritte der Psychologie und ihrer Anwendungen*. 1 Band, VI Heft.

KARL MARBE. Inhalt: (1) *Psychologische Gutachten zum Prozess wegen des Müllheimer Eisenbahnunglücks*. Pp. 35. (2) *Kinderausagen in einem Sittlichkeitsprozess*. Pp. 22. Leipzig: Verlag von B. G. Teubner.

Here are some practical applications of psychology which may have, in their future development, an even more direct bearing upon social welfare than those commercial applications so interestingly commended by Professor Münsterberg in his recent book.

Dr. Marbe, director of the Psychological Institute at Würzburg, was called in as an expert in two cases here reported together, but widely different in character, as their titles will indicate. In the railroad case he was called in by the prosecution; in the other, by the defense. In both cases his side won the verdict. Moreover, it is evident to any one who will read the reports that his expert knowledge was of great importance in influencing the judgment of the court. Insanity experts have become a byword among us. Some would pray to be delivered from a new set of psychology experts; but if all can be as sane and as restrained as Professor Marbe we need not fear.

Case one is concerned with a railroad accident at Müllheim, Baden, when fourteen people were killed, many injured, and much property was destroyed. Contrary to expectation in such cases, the locomotive engineer, the fireman, and the guard (Zugfahrer) were not killed. Their examination upon the subject of the accident began at once.

In general outline the accident is known to all of us through similarity to railroad accidents in the United States. It was the old story of run-

ning past signals, neglect of instructions, and a liberal indulgence in beer, wine, and spirits during the engineer's day's run. It was discovered, also, that the engineer suffered from *incipient* arterial sclerosis of the brain; but this seems to have been opportunely discovered by the defense. The engineer ran into the station at Müllheim disregarding all signals (and German stations are plentifully supplied with them) on to a switch which led abruptly from the main track through a tunnel in the station building, at a speed of one hundred kilometers; whereas twenty kilometers was the prescribed rate for that switch. He had been manifestly "queer" and stupid all day,<sup>1</sup> so that the guard had remarked it; yet neither he nor the fireman, while they knew the danger and their own responsibility under the laws of Baden, did anything to prevent the disaster, except that the fireman shut off steam before the disaster without, however, applying the emergency brake. The guard had attempted to apply the emergency brake too late, and, in his panic, failed, as an investigation after the accident showed.

The state's attorney called upon Dr. Marbe to answer as an expert such questions as the following:

(a) (1) Was the fatigued condition of the engineer noticeably greater than that which might have been induced by his labor, the unusual heat (July 17), his incipient sclerosis, etc. (2) Did the use of alcohol weaken his sense of obligation to attend to the progress and safety of his train?

(b) Had the guard time in 22 seconds<sup>2</sup> (1) To recognize the ineffectiveness of his engineer, (2) To become clear in his mind that the train was in danger, (3) To bethink him of his duty to interfere, (4) To decide for the emergency brake, and (5) To pull this?

(c) How many seconds did the fireman need (1) To represent to himself the delay of the engineer, (2) To become clear as to his own responsibility to avert danger, (3) To decide for the emergency brake, (4) To pull this? and, in view of the fact that the emergency brake should immediately follow shutting off steam (which had taken place), (5) How much time would it take to apply the brake after shutting off the steam?

I may not take time and space to recount the details of the report which covers many pages of a sane, careful, well-balanced investigation: one highly calculated to raise applied psychology in the estimation of public men, especially members of law courts; but a few main points may be indicated.

(a) The exact amount of spirituous liquors consumed by the engineer within eighteen hours was ascertained—how, the report does not say. The engineer was certainly a capacious person! This came to a total which on the basis of the usual percentage of alcohol to be found in the

<sup>1</sup> It was known by his guard that he had consumed a large quantity of various alcoholic beverages during the day, but this did not seem to function as a cause of querness and dumbness.

<sup>2</sup> Had steam been shut off and the emergency brake applied 15 meters before reaching the station signal, the train would have slowed down before the danger-point, and the accident been averted. The estimated time which elapsed between that point and the entrance to the switch was 22 seconds.



various beverages consumed, was put at 178.3 grams of alcohol; and by citing various experiments it was shown pretty conclusively that such an amount would produce even upon a hardened drinker that "tired feeling," sleepiness, and an inhibition of the ordinary reflexes for twenty-four hours or more. In fact, so far as this part of the investigation is concerned, the conditions are too well known to need any comment or any further weight of authority.

The expert psychologist here, as in the whole investigation, declined to enter into the moral judgments or to give causes for the accident; he confined himself to his psychology.

(b) More significant is the attention called to the effect of alcohol upon the ordinary power of inhibition which would, in normal conditions, have so influenced the engineer that, even had he been suffering unduly from the heat, illness, etc., he would yet have made an effort to look after the safety of his train.<sup>3</sup>

(c) In order to answer the questions relating to the amount of time needed to set brakes, shut off steam, awaken to a sense of responsibility (which would quicken reaction time), etc., etc., the expert had recourse to simplified apparatus in his laboratory, by means of which the essential characteristics of the situation on the wrecked train were reproduced and, as a result of experiments conducted with many persons and instruments measuring very small fractions of a second, it was shown that the time necessary for the guard to observe that the engineer was not fulfilling his duty and then to apply the brake himself, did not exceed 2.5 seconds.

Here the author has, wisely, taken some pains to show that a consciousness process covers a much shorter interval of time than the expression of it. The guard did not need to reflect upon this situation in *words* in order to recognize it.

Allowing for some situation arising for which the guard (or the fireman) could not have been prepared, we add an extra second of time, although some allowance had already been made. Making still further allowance for safety's sake, the total time needed (as shown in the questions of the state's attorney) could not exceed four seconds, whereas there were 22 seconds available.<sup>4</sup> The defense objected that such measurements

<sup>3</sup> Note also the following points made: "Die Art und Weise und wahrscheinlich auch die Zeitpunkt, in welchem der Lokomotivführer seinem Schlafbedürfnis nachgab-diese Dinge waren auf jeden Fall von dem Alkoholgenuss kausal beeinflusst. War nun aber der Alkohol eine "erhebliche" Ursache des Umstandes, dass der Lokomotivführer seinem Schlafbedürfnis nachgab. Das heisst: Hätte der Lokomotivführer nicht vielleicht seinem Schlafbedürfnis auch nachgegeben, wenn es gar keinen Alkohol getrunken hätte? Die Frage, ob der Alkoholgenuss ein erhebliche Ursache für die Nachgiebigkeit des Lokomotivführers gegenüber seinem Schlafbedürfnis war, muss ich mit der allergrössten Wahrscheinlichkeit bejahen." S. 349.

<sup>4</sup> Two other points are to be noticed: (1) Laboratory experiments are made under conditions of moderate attention only. In actual operation of a train much greater attention is normally to be expected. (2) Cf. page 359 of the *Fortschritte*. Observe that the guard may have for years entertained a contempt

were all very well for the quiet of the laboratory, but that they could not hold good in actual practise. Amusing ignorance of reaction time was shown—perhaps the expert referred to tenths of a minute! This led to a desire on the part of Dr. Marbe to perform at least a part of the experiment in an actual locomotive of the same type as the one destroyed, with a *Packwagen* for the guard. Such an experiment was carried out through the courtesy of the railroad. The experimenter employed as subjects the regular train crew and used a stop-watch measuring fifths of a second. Results of this experiment triumphantly vindicated the accuracy and propriety of laboratory methods.

This accident occurred on a Monday, according to criminal statistics one of the worst days of the week for reprimands; and its connection with the consumption of alcohol is most significant. Dr. Marbe suggests the manifest duty of railroads to require abstinence from their employees.<sup>5</sup>

As a result of this trial, the engineer was sentenced to two years and four months' imprisonment and costs, the guard received six months and costs, and the fireman merely had to pay the costs, it being considered by the court that the duties of his position were such as to give reasonable excuse for his failure to notice that the engineer had run by the signals.

In the second investigation here reported an unmarried schoolmaster of forty years of age was charged with criminal immorality with seven girl pupils, ten and eleven years of age. The accusation was made originally through anonymous letters, and corroborated by the girls in question at an examination held by the pastor of the village (Pfarrer) who, in Bavaria, is a local school inspector. Later, another examination was made by the police, and in both of these examinations the method of questioning was one which is very startling to Americans. The children were not asked to tell direct stories of what had occurred, but leading and intimate questions of a most revolting character were asked and were to be answered by "yes" or "no." Some of the questions could hardly have been understood by the children, while in others, the power of suggestion was great and fairly demanded false answers. The testimony of children and of young girls approaching puberty, in particular, especially when it relates to sexual matters, is notoriously unreliable. When combined, as here, with this unspeakable method of extracting testimony, the result is shocking indeed. A desire to do away with such methods of investigation is the excuse offered by Dr. Marbe for the nauseous details of this report, for printed directions, "that sort of instruction," as emanating from people who knew nothing about the matter. He may have been encouraged in his belief by the number of trips taken, free from accident, when yet instructions had been disregarded. In the recent New Haven wreck case, testimony was abundant that running by signals, even in a fog, was common practise.

<sup>5</sup> In this connection note that the great wave of prohibition which has recently swept over the Southern States of this country has been caused by industrial conditions, not morals. Cotton manufacturers and others have found that, under prohibition, they get their workmen back on Monday morning as good as new!

details, the publication of which would be permitted in this country only to medical journals of limited circulation.

The charges were most specific and revolting—always understood that they were not volunteered, but elicited—yet the teacher was triumphantly acquitted by the court on the ground that such testimony was wholly unreliable. Much of it was withdrawn by the girls after they had realized its seriousness, and practically all of it could be traced to two girls (one in particular, whose character was quite untrustworthy and who had infected the others). By suggestion the girls were brought to believe that they had suffered acts of which they had merely heard. Physical examination showed that the outrages to which they had testified had not been committed.

The schoolmaster had not been popular in the village. Moreover, he had manifested at times a reprehensible, but not criminal familiarity of conduct with his pupils. Malicious gossip did the rest.

Of chief significance for us are these points: (1) The services of a trained psychologist, who knew the value of testimony, were called for; and it is his recommendation that there should be present such a trained taker of testimony at every examination and that both questions and answers be taken stenographically. (2) The verdict was influenced by this expert judgment. (3) The value of concurrent testimony was again weakened. (4) Certain reforms in question-putting were demanded. Even in this country undue weight is attached to the testimony of perverted or abnormal children. "For of such is the kingdom of heaven!" One hates to part with such an illusion—but illusion it surely is. All childish testimony is untrustworthy and much of it is bad, if anything is bad.

From the point of view of applied psychology these two cases show how the psychologist may be of signal service to courts without going beyond the proper confines of his profession. The moral aspect of these cases it is more difficult to estimate. In the railroad case some of the proper delinquents received adequate punishment which they have too often escaped, both in this country and abroad—but notably, here. It would be a good thing for the general public if as careful and able an expert could be called in to investigate some recent railroad horrors with a view to fixing responsibility with accuracy, but, after all, society desires not so much to punish the guilty as to avoid future disasters. From this point of view railroad authorities would do well to study the physiological effects of alcohol on reaction times. While railroad employees in this country are not so much given to drinking as those in Germany, there is ample room for improvement.

As to the case of alleged immorality: Doubtless many an innocent man has been condemned upon the testimony of youthful neurotics just because the testimony was clear cut and consistent. Since we now know how false this can be it behooves us to avoid the error.<sup>6</sup>

In the railroad case the court held all three men to have been guilty as charged; but, though fourteen people were killed and many injured, the

<sup>6</sup> Psychologists and moralists should own the entire report and study it. Its scientific character is beyond question.



sentences were not at all those appropriate to manslaughter. This is evidence that society apparently fears less the man who may kill scores or hundreds through besottedness or brutal stupidity than it does one revengeful person with a hot temper. But is society wise?

In the schoolmaster's case, he was justly acquitted of a charge which, had it been sustained, would have brought upon him severest punishment, removal from his place and the ruin of his career; but it is not clear that, even then, anything could have been accomplished to prevent future evils of the same kind.

GEORGE CLARKE COX.

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*Das Weltproblem.* J. PETZOLDT. Zweite Auflage. Leipzig und Berlin: B. G. Teubner. 1912. Pp. xii + 210.

This book is so suggestive and interesting that a second review of it will not be superfluous.<sup>1</sup> It is a small book on a great theme, a thing to be grateful for, and it is written with enthusiasm for a fine cause. That cause is twofold, the emancipation of our imagination from an academic tradition, and loyalty to a too little known thinker, Richard Avenarius. Readers of Avenarius, particularly of "*der menschliche Weltbegriff*," will find much that they are familiar with, especially the theory of "introjection," to which Petzoldt gives a more extensive application. This rehandling of the theory of introjection is of particular interest. There has been, we may say, a first and a second introjection; the first was the introjection of spirits, the second was the introjection of substance. The first was described by Avenarius, who calls our attention to the fact that primitive folk take quite naturally for granted, not as theoretical inferences, but as simply and normally experienced, the existence of *mana*, souls, spirits, and gods, and that much recent and contemporary philosophical confusion has resulted from the fact that, to a certain important extent, we operate unconsciously with an intellectual apparatus derived from animistic sources. In what we call conventionally "primitive culture" imagination seems to be mass imagination; there is no individual inquiry. The tales about things in general are instances of local mythology.

To break through this crust of animistic preconception requires a remarkable individual or a series of happy circumstances. Petzoldt takes the name of Thales as that of the first empiricist and positivist. For to substitute any "*Urstoff*," provided by nature for the *ἀρχαί* of mythology was to be, in spirit, at least, an empiricist and a positivist. But the appeal from spirit to matter involved its own fatality, namely, the distinction between the screen of empirical "accidents" and the substance that hides behind them, together with the attribution of importance to the latter. The artifice of every philosophy that seeks the heart of things by an "*Aufhebung*" of empirical nature is prepared for in the introjection of substance.

<sup>1</sup> The first edition was reviewed in this JOURNAL, Vol. IV., page 582, by Professor C. H. Rieber.

The history of the substance idea need not be here pursued. Petzoldt reviews it swiftly and polemically. His purpose is critical, not primarily historical, and what he has to say must come between the covers of a small book. The virtue of brevity may well atone for an impression of historical dogmatism, particularly inasmuch as historical issues that might be raised do not obscure the essential thesis. Somehow or other the introjection of substance was brought about. It is the business of the history of philosophy to tell how this happened. In any case, the search for substance has encouraged indifference to facts; the theoretical faith in it has been an excuse for actual ignorance.

Two thinkers there have been, according to Petzoldt, who might have freed philosophy from the substance tradition, Protagoras and Hume. Protagoras was willing that every one should describe things as he finds them. That does not preclude the comparison of different descriptions, and the discovery that one sincere description is better than another one no less sincere. Hume's empiricism was less complete, since he discussed the substance problem. He nearly laid the ghost, but not quite. He left unswept up the clutter of mental states that has given us in our own day "the stream of thought" which William James might also have characterized as "the faint rumor left behind by the disappearing soul upon the air of philosophy."

Petzoldt speaks of Kant and his British predecessors in a way that German writers are not wont to do. It is, he claims, philosophical injustice that the influence of Kant still exceeds that of Hume. If only Locke, Berkeley, and Hume had been studied with the same zeal that has been devoted to Kant we should now be better off because (here I interpret) the concept of substance would, with good luck, have been decently interred instead of being piously perpetuated as the *Ding an sich* and the *Ich an sich*.

Petzoldt is at pains to insist upon the logical fallacy involved in reducing all existence to one type of substance which receives its meaning and its name from its empirical character and its relation to other types of existence. A problem which demands for its solution the discovery of the single nature of all there is, the problem whether the world is all this or all that or all something else, is, he insists, a problem of the most artificial and contradictory type. "*Nach der Welt an sich fragen ist schlimmer als die Quadratur des Zirkels und das perpetuum mobile suchen*" (p. 199). Such questions are answered when they are understood.

The word substance, like the word soul, has not, of late years, been heard often in philosophy, but have we been so free of the idea? Have we not been continually called upon to discuss reality that inexplicably hides its face, or to substitute for the face of nature its precise reduplication? It is clear that the idealists argue for a theory of substance. Do the realists, for instance, argue for another? Can a problem of to-day be identified as a problem of substance, or is it freely and professedly a problem of the interdependence of empirical facts? This is the test proposed by an unusually stimulating little book.

*The Elements of Psychology.* DAVID R. MAJOR. Columbus, Ohio: R. G. Adams and Company. 1913. Pp. xiii + 413.

To make general psychology more palatable to the beginning student is what the author modestly set out to do, being conscious of the "winter of our discontent" in the realm of psychology books. Among his motives for the undertaking is that of rearrangement, to proceed "after the manner of the eclectic without special regard to the systematic agreement of the topics and matter selected" (III.). He desires to avoid championship of any given principles of interpretation as structural or functional.

In the opinion of the reviewer such renunciation was not educationally a justifiable procedure. Students *should* be conscious when studying a text of "a systematic agreement of the topics and matter selected." But fortunately the author does not err in carrying out his own principle of eclecticism, since, after all, his presentation of material is in general agreement with the traditional order and content. In style the book is distinctly less palatable than some of its forebears and errs on the score of what might be called the American sin of over-obvious spiritual pabulum. We have on page 299, for instance, the following: "It is one of the most familiar of our experiences that success in our undertakings gives pleasure and that defeat brings pain. . . . The whole round of life, from the eager games and contests of childhood and youth to the most serious concerns of mature life, is run through and through with the joys of success and the anguish of defeat. Likewise whatever conditions favour the attainment of a desired object or aim are pleasant; those which thwart its attainment, unpleasant. Hence, *e. g.*, the joy in the full purse and its power to provide the summer outings, or to purchase the coveted set of books, or the collection of rare pictures; hence the pangs of poverty and the inability to obtain a fair portion of this world's goods." This will serve as an example of many pages.

Is it not appropriate that psychologists should claim some kindred with the poets in giving scope for the play of a reader's intelligence? And is it not to invite mediocrity of scholarship if one present as learning that which is the common property of the uninstructed mind, he who runs being able to read? In the opinion of the present writer it is time that our text-books be made less popular and more scientific as being more concerned with principles and with only such facts as may be construed to have a bearing upon principles or upon less obvious generalizations of facts. And "scientific" here need not mean sins against our esthetic sense. Undoubtedly one of the causes for our American repute in exact scholarship is the popular text.

Both as to principles and facts the author is guilty of inaccuracies. For instance, the "modern teaching" concerning the relation of mind and body, psycho-physical parallelism, "now supported by a mass of evidence so convincing that there is little likelihood that it will require revision in any important respect" is defined as the doctrine that "our mental life is intimately related to *and dependent upon changes in the nervous system*"<sup>1</sup> (p. 15). As example of inaccuracies as to fact the

<sup>1</sup> Italics the present reviewer's.



diagram (p. 47) to illustrate the functions of the cord represents *both* sensory and motor nerves as posterior (or anterior). For such lack of scholarship there is, of course, no excuse.

Though this review is largely negative the present writer is not oblivious of the merits of Professor Major's book. He attains a clear and concrete description, states issues, for the most part without bias, has a style which escapes being heavy, and on the whole presents a text which will be of assistance to many who study psychology from a popular point of view.

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### JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. May, June, and July, 1913. This triple number, the second part of the supplement of the *Revue* for the current year, brings to a close the analysis of types of the religious consciousness within the Catholic Church. An abstract of the first part of this work was given in this JOURNAL, Vol. X., page 277. *La Compagnie de Jésus* (pp. 445-488): A. BROU. - Under the rigorous discipline of Saint Ignatius, the Jesuits, in their various stations of service, gain a spiritual strength which brings them great inner freedom from self and nearness to God. *Saint Vincent de Paul* (pp. 489-509): J. CALVET. - Saint Vincent de Paul had little of the ecstatic in his make-up, but with a clear and humble faith he inclined his will to the commands of God and worshiped him by his deeds. He was not of the quietistic, but of the active type. *Les premières Dames de Charité au XVII<sup>e</sup> siècle* (pp. 510-546): MGR. DEMIMUID. - An account of Marie de Gonzague, Queen of Poland, the Duchess of Aiguillon, and Mme. de Miramion as types of the three classes of women in the Dames de Charité in the eighteenth century. *Le Bienheureux Curé d'Ars* (pp. 546-558): S. G. MGR. MONESTÈS. - The Curé d'Ars, who unceasingly cultivated the passive virtues of meditation and adoration, is given as an example of the type most helpful in ministering to the spiritual wants of others. *Un sauvage converti* (pp. 559-574): J. DARNAND. - A sketch of Mataafa, who was converted and manifested his faith by denying himself to save his people. *La vie intime du catholique* (pp. 575-615): J.-V. BAINVEL. - The intimate life of the Catholic is one of perfect humility and of happiness in the love of God. *Les mystiques interprétés par les mystiques* (pp. 616-660): J. PACHEU. - Extracts from the mystics showing belief in an inner heart or core of the soul, which is the meeting place with God in mystic ecstasy. *Le chant religieux catholique* (pp. 661-691): C. BESSE. - The chant is treated as one of the effective agencies for the cultivation of the religious life. *La liturgie catholique* (pp. 692-886): DOM M. FESTUGIÈRE. - An elaborate and interesting defense of the place of the cult in the religious life.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. May, 1913. *L'objet et la méthode de l'analyse mathématique* (pp. 307-328): P. BOU-

TROUX. — Analysis always ends in a new construction, thus the ellipse no longer appears as a collection of points, but as a sort of "Leibnizian monad," or a "law." Analysis "does not, then, make synthesis useless, but serves as a preface and condition to it." *Esthétique et sociologie* (pp. 329-371): G. GASTINEL. — A criticism of Chas. Lalo's *Introduction à l'esthétique* which has as its grounds the looseness of the sociological method. *Sur la vie intérieure* (pp. 372-389): F. D'HAUTEFEUILLE. — A study of the importance and nature of the inner life and of its relations to the domain of morality. *Etudes critiques. La philosophie de Georg Simmel*: A. MAMELET. *Questions pratiques. Le suicide*: G. CANTECOR. *Supplément*.

Carus, Paul. The Mechanistic Principle and the Non-Mechanical: An Inquiry into Fundamentals with Extracts from Representatives of Either Side. Chicago and London: The Open Court Publishing Company. 1913. Pp. iv + 125. \$1.00.

Del Vecchio, Giorgio. Der Fortschritt im Recht. Berlin and Leipzig: Dr. Walther Rothschild. 1913. Pp. 4.

Del Vecchio, Giorgio. La Ciencia del Derecho Universal Comparado. Madrid: Hijos de Reus. 1911. Pp. 35.

Del Vecchio, Giorgio. Il Concetto del Diritto. Bologna: Nicola Zanichelli. 1912. Pp. 155.

Del Vecchio, Giorgio. De la Guerra y la Paz. Madrid: Hijos de Reus. 1912. Pp. 171.

## NOTES AND NEWS

### LETTER FROM MR. PARTRIDGE

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

Will you kindly allow me to make, through your JOURNAL, an explanation in regard to my "Reading Book in Modern Philosophy," which was published in September? My work of revising was hurried, and in some way my final corrections were either received too late or were overlooked by the printer. The fault was mine, for revision should not have been undertaken in so short a time as was allowed me. I did not discover the condition of the book until a large part of the edition had been distributed. To those who have copies I should like to announce that a list of corrections has been prepared, and that the many minor imperfections in the book will be eliminated in a second edition, which will be issued soon, if the general plan of the work seems to meet the needs of teachers.

Very truly yours,  
G. E. PARTRIDGE

ON November 20, the Philadelphia Pathological Society held, at the College of Physicians, a symposium on the subject of "Physical Growth and Mental Development." The speakers were Dr. H. H. Donaldson, of

the Wistar Institute, "Studies on the Growth of the Central Nervous System"; Professor Bird T. Baldwin, of Swarthmore College, "The Normal Child; Its Physical Growth and Mental Maturity," and Professor Lightner Witmer, of the University of Pennsylvania, "Children with Mental Defects Distinguished from Mentally Defective Children." The discussion was opened by Dr. H. H. Goddard, of the New Jersey Training School, Vineland, N. J., Dr. Charles Burr, of Philadelphia, and Professor J. H. Leuba, of Bryn Mawr College.

PROFESSOR JOSIAH ROYCE calls attention to the following typographical errors in his article on "An Extension of the Algebra of Logic" which appeared in the last issue of this JOURNAL: On page 624, first line, for  $abd$ , read  $\bar{a}\bar{b}\bar{d}$ ; seventeenth line, at end, for  $(cd; \bar{a}b)$ , read  $(cd; \bar{a}\bar{b})$ ; sixth line from bottom, the right hand member of the equation, for  $(ab; dc)$ , read  $(ab; \bar{d}c)$ . On page 627, sixth line from the bottom, for  $abd$ , read  $\bar{a}\bar{b}\bar{d}$ . On page 628, third line from the bottom, for  $gh\bar{e}$ , read  $g\bar{h}\bar{e}$ . On page 629, the fifteenth line, read

$$\frac{a}{b} \circ \left( \frac{c}{d} \circ \frac{e}{f} \right) = \frac{u}{v}.$$

On page 633, sixteenth line from bottom, for  $h/g$ , read  $h/\bar{g}$ .

THE New York branch of the American Psychological Association will meet in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on Monday, November 24, at 8:00 P. M. at Columbia University. The following papers will be read: "Measurements of Accuracy of Judgment," Mr. Richard H. Paynter; "Professor Thorndike's Attack on the Ideo-Motor Theory, Professor W. P. Montague; "The Character of Ideas," Dr. J. P. Turner; "The Color Vision of Animals," Mrs. Christine Ladd-Franklin.

At the Fourth International Congress on School Hygiene at Buffalo on August 20, Dr. C. E. Ferree, of Bryn Mawr College, read a paper entitled "The Efficiency of the Eye under Different Systems of Illumination"; and at the Seventh Annual Convention of the Illuminating Engineering Society held at Pittsburgh on September 23, he spoke on "The Efficiency of the Eye under Different Systems of Illumination: The Effect of Variations in Distribution and Intensity."

THE annual joint meeting of the American Anthropological Association and the American Folk-lore Society will be held in the American Museum of Natural History, New York City, December 29-31. Titles of papers and abstracts should be sent, not later than December 1, to Professor George Grant MacCurdy, Yale University Museum, New Haven, Conn., who is responsible for the joint programme. The programme will be mailed to members about December 10.

IN the absence of Professor Warner Fite, who is lecturing at Stanford University, his work at the University of Indiana is in charge of Dr. A. C. Mohr, of Chicago University.

THE meeting of the Conference on Legal and Social Philosophy to be held at the University of Chicago has been postponed to April 10 and 11.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### NATURE AND HUMAN NATURE

THE time-honored scholastic definition of man as *animal rationale* has nowadays given place to a zoological classification which sets him in the order of primates along with the lemurs, monkeys, and anthropoid apes. The anthropoid apes, or *simiidae*, are, of all these cognate types, closest in structure to the human family, the *homonidae*: they are tailless, like man; their four limbs are hands and feet, even though their feet are more like hands and their hands less perfect than the human; they are accustomed to a semi-erect posture, and in general their anatomical structure is homologous with that of man. Most striking is the analogy in form, complexity, and function of the ape-brain and the human. True, there is a chasm separating the ape-brain from the human in the matter of size; but the difference in size between the brains of the apes and the monkeys is greater than that between the brains of men and those of the apes, and again the difference in weight between the heaviest and the lightest human brains is little less than that between the latter and the heaviest brains of the apes.

Most of the anatomical differences between man and the apes may be ascribed to the fact that the apes are specialized for arboreal life, whereas in man the flattened foot, the straighter limbs, the sigmoid flexure of the spine, are all traits associated with the erect posture, and all seemingly essential to a walking ape. Very likely we may count as consequences of this difference of habit the nervous alertness—the bodily wakefulness and tension—which the delicate balance of the upright posture is bound to call forth, and also the profound development of the gregarious instinct which the face-to-face attitude invites,—for we have only to reflect upon the part taken by play of expression in our daily intercourse to realize that man owes wondrously to this his human comradeship, and so his whole social evolution. Nevertheless, from the point of view of mere structure, it is the difference in brain alone which justifies the separation of the *homonidae* from the *simiidae*, and there is little doubt that this structural difference would be of small moment were it not interpreted by far vaster differences of function.

The zoological definition of man, thus, brings us back to the scholastic formula for its decisive differentia: Man is *the* "rational" animal; it is his reason alone that conclusively separates him from the rest of the animal kingdom. But reason is a functional rather than a structural endowment; it appears only in conduct, never in organization. Here we are abruptly brought to face with an anomaly and a problem. The anomaly is that what is essential in human nature must be judged by criteria which are different from those that we employ in judging animal nature. The problem is the relation of a mind, which we judge according to its own distinctive laws, to a body, which we assort with the general world of animality.

Without doubt this problem is in large part set by the phylogenetic implications of our biological systems. When the zoologist classes the *homonidæ* and *simiidae* as families of the same order, he is not merely pointing to morphological resemblances, he is pointing beyond this outer cousinship to the inward one of common descent: men and apes are of one blood, however remote the ancestry from which both spring. This is now a fact of common acceptance, and it is the one fact which has brought into vivid relief the discrepancy of the structural and functional relationships of human nature. From the standpoint of zoology we are constrained to assume a spiritual as well as a physical relationship with the life whence our bodies are derived. Yet, as we have seen, sober reflection does not permit even the biologist to place man actually in so close a connection with the inferior animals as his mere physical structure legitimately demands. The immense distance of the human from the animal mind, of the human from animal achievement, is a fact too glaring to be glozed over; and so we are driven to the observed inconsistency of making man unique, not through what he is physically, but through what he does spiritually. To be sure, stress is structurally laid upon skull form and brain size; but this may fairly be claimed as mere convention, for the size of the brain is in itself meaningless; its whole significance springing from the fact that it is a symbol of intelligence, denoting man's one essential differentia, his human mind.

We are thus driven into a troublesome dualism in our view of the human constitution. We can not content ourselves with the mere statement of the genetic relationship of our bodies to the bodies of the brutes, because of our keen awareness of the gap between brute and human mind. We can not rest satisfied with the traditional characterization of the human as the rational because it fails to give due recognition to our kinship with minds less than human. And so we are left with the psychological problem of the relationship of body and mind set for the huger area of life-history, with all its puzzles and antinomies accentuated.

Doubtless whatever solution there is to be must be a metaphysical solution. The foundation of metaphysics is the analysis of mind, and there, if anywhere, the clues to our maze must be sought. It is worth while to point to the one proffered redemption of the plot which is appealing widely to men's minds,—I mean Henri Bergson's philosophy of creative evolution.

Briefly, Bergson's philosophy sees in the world a dualism of living and dead, mind and matter. It is a dualism curiously analogous to Plato's, only it is a kind of inverted Platonism. For while Plato, like Bergson, identified matter with the dead and mind with the living, it was to this living mind that Plato ascribed all that we call form, idea, law, order, whereas for Bergson form is the very seal and token of material death. Form for Bergson is the mind's contemplation of its own corpse; form is retrospect, senescence, decay, the limitation of function, the suffocation of life. But life itself and mind itself are something other; they are names for the creative energy of the universe, which can only be described as a vital impulse and can only be felt as an intuition. In the history of the universe this vital impulse has held a various course. It has burrowed darkly, as from some cosmic womb, outward toward a goal of illumination which is not, and perchance never can be won. Its path is epitaphed with failures. In the vegetable world it is sunk in torpor. In animal instinct it is blinded as with a sudden and fatuous hope,—for instinct rests its efficiency upon highly specialized structure, and specialized structure means life self-immured; instinct is the tomb of the vital impulse. Finally, in our human reason, a window is opened upon the past; we see the array of dead forms with which the course of the life-impulse is laid out, our own bodies amongst the others, and from this we draw our general chart of physical limitations. But we have yet to reckon with what is most distinctively human of all—that bright intuition of life, which, building upon reason, as reason has built upon instinct and instinct upon vegetable torpor, creates in man an inner and ineradicable conviction of the surmountableness of death. The figure which this conception of Bergson's suggests is that of the poet Dante borne aloft by the swift spirit of Beatrice: his mortal eyes are so blinded by the splendors above that he turns for refreshed sight to the clear-cut forms and charted courses of the spheres beneath; yet the impulse which is the truth of his spiritual life is that "concrete and perpetual thirst for the deiform realm" which bears him up with a velocity that is the motion of the cosmos itself. And here again Bergson recalls Plato, for surely that dazzling light of the other world which inspires him who has once seen it with an immortal longing, surely with Plato this is more than the light of reason;



rather it is that insight into eternal beauty which is the intuition of life.

Whatever be one's opinion as to the evidences upon which Bergson's theory rests, there is no disputing that it brings into sudden clarity what before was gropingly dark. Man's body and mind are seen no longer as the self-contradiction of one nature, but now as the inevitable reflection of nature's own dualism. The essence of the physical must lie in accomplished history, of the psychical in unresolved futurity,—and hence the twofold definition of man: in the physical realm it consists in his body's dissection, in morphological analogies and anatomical relationships; in the psychical it is resolved into a statement of the human function of life.

Undoubtedly, too, this solution is given an added plausibility by Bergson's conviction that evolution proceeds through mutations rather than by infinitesimal variations. It is a relief to be freed from the illusion of the infinitesimal, the effort to answer the problem of change by focusing it beyond the reach of our powers of discrimination. The old saying that nature makes no leaps is challengingly denied; and, indeed, when we pause to reflect upon what comes to us in daily experience, before it is arranged and graded by reflection, we will be the more readily convinced that in nature all progress is saltatory. Which truth—if it be as fundamental as it seems—at once quiets our demand for a gradation of psychical life from brute to human,—even while the physical gradation is still called for by the retrospective and reflective nature of physical knowledge.

I am presenting this application not as a fiat advocacy of Bergson's philosophy, but as exemplifying therein the type of metaphysic which alone can supply us with a direct and satisfying statement of man's essential nature. We need only address ourselves with open eyes to the difference in degree between human and animal intelligence to see that this difference in degree is so huge as to constitute a difference in kind; and forthwith we are face to face with a more than zoological problem. Let us suppose, if we wish, that it was the happy chance of our human ancestor's choosing or being forced into other than an arboreal life which made of man a generalized rather than a specialized anthropoid,—even so, we have but given the condition that enabled nature's creation of human intelligence: the human mind itself is no augment of arborescent faculties, but a sudden and unpredictable mutation, whose explanation must lie in its functions rather than in its antecedents.

The crux of metaphysics, then, is to show the place and action of mind in nature. And in saying mind, we mean perforce the only mind that we can hope adequately to know—our human mind. The

development of thought must be the material of investigation, but the object of investigation will be that psychic structure which is shown in the ordering of this material. In speaking of structure here, it must not be assumed that we are falling back upon physical analogies; for as all mind exists only in mental operation, so is an analysis of mental structure essentially but an analysis of function. Our task is really such another as was Kant's, with the difference that the whole mental life of the race, rather than the experience of a typical mind, is our canvas.

It should not be inferred that this segregation of the metaphysical task constitutes a bias, or that an idealistic solution is covert in the statement of the problem. Such is surely not the case. All knowledge proceeds by first roughly blocking out areas of investigation; and here, it seems to me, our common phrases give us the rough chart. For we speak of nature and of human nature, each term designating a special province of human experience. Commonly the two are antagonistic. The world of nature is the world of the non-human and the anti-human. Most commonly it denotes that which is free from or beyond man's power and domination. The countryside as contrasted with the city, the virgin earth and the uncleft sea, the wildernesses of tropic deserts and arctic snows,—these are nature in the first intention of the term, while natural powers and forces are all such as transcend man-power; they are the physical forces of stellar movement, the chemical and alchemical forces which mold and remold man's little range of earthly crust, the secret springs of florescent life and iridescent decay,—all the tameless and uncanny borderland of human days. This we call nature, and over against it we set the familiar and congenial sphere of things human—the vantage of knowledge and sentiment and gregarious understanding which we call our wisdom. Human nature is our little islet of cosmos amidst the enveloping chaos of the unknown,—or, to change the figure, it is like a Roman castra temerarily planted far in the dark forests of the barbarians: squared and blocked and paved, all is orderliness and precision, while pale and foss fence it securely from prying eyes and hostile spears. So our human nature is set in the midst of engulfing outer nature. But we have learned the lesson of the Romans ill if we have not come to view this vantage of orderliness as a seat of growth and a center of conquest.

If, once and again, wearied with effort, we pine for a return to nature, we have but to try the experiment to discover that the return is no more than a marauder's raid. "Back to Nature" is illusion; what we mean by it is expansion rather than surrender of the human domain; it is a battle-cry rather than a spell of enchantment. The only progress we can know is a military progress under the banner

of our birthright; our only victory is the subduing of the brutish and barbarous environment of life to the rational and spiritual nature of man.

Perhaps this may seem to be the platform of a stout intellectualism. If it be so it rests upon no narrow interpretation of the intellect—which is not the brittle and crusty thing the casts and scours of thought are often assumed to imply. “Intelligence” is its fitter name, for “intelligence” seems better to connote that union of thought and feeling which we call sentiment, and which is the true index of the humanization of experience. Intelligence, sentiment,—this is the properest token of humanity, because it stands not only for clear-cut ideas, but also for their masterful assimilation through conduct; and apart from conduct all thought is illusory.

But no man acts to himself and no man lives to himself. The error of those biologists who sketch man in a scale with the apes is their consideration of him as an individual merely, whereas in what is characteristically human he is never this. No man is limited by his integument, nor can the human achievement be computed by physiology alone. The spiritual structure which we call culture, civilization, humanity, in its material as in its formal aspects, is the work of all men, and of men not as animals, but in their essential human quality. Only in a study of this work can we arrive at a true description of human nature—whence alone can be derived the chart of conduct and its inspiration.

And ought not the creation and growth, in the coarse body of nature, of a thing at once so wonderful and so exotic as human spirituality—ought not this give pause to our dogmatic assurance that graded continuities yield the whole pattern of reality? Human genius is not so patterned; human genius moves by bounding aspirations. And may it not be that human genius is symbolic of the better genius of the world itself, and our spiritual cosmos a stronger and more enduring reality than is the titanic physique of nature? “The distance from Earth to Sky,” says Longinus, “is a measure, not so much of the stature of Strife, as of Homer himself.”

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## DISCUSSION

### DR. STRONG ON “THE NATURE OF CONSCIOUSNESS”

RECENT realist theories of perception take as their starting-point the principle that our ordinary beliefs as to the nature, content, and locale of reality are false—they seem to regard this as unquestionable. The assumption is one that presents no difficulty to a



philosophy which, like the Berkeleyan, holds that the "materiality" of the objective world is unreal, or like the Kantian, that its reality is merely phenomenal, but it will be found to be a serious, if not a fatal, handicap to any system which regards itself as in any true sense of the word realistic; and this applies to the recent arguments for realism (valuable and significant as these are as evidence of a long-overdue reaction in philosophy) which have appeared in England over the names of Mr. Moore and Mr. Russell,<sup>1</sup> in America from the group of writers of "the new realism," and still more recently in Dr. Strong's paper on "The Nature of Consciousness";<sup>2</sup> and if the latter is here selected for the most direct criticism, it is only as a peg on which to hang remarks, and not because it has itself more serious defects than the arguments of the other writers.—It may be convenient to summarize their views, so far as these relate to the process and content of perception.—"The objects of human knowledge," said Berkeley, coolly begging the whole question at the very start of his argument, "are ideas"; the "objects of experience," said Kant, "are phenomenal"—"the truly real is transcendental to our experience." Both of these positions are repudiated by the writers named, who nevertheless agree that we do not immediately experience real objects; they denote what we do immediately experience by the terms "sense data" (Moore and Russell), or "images" (Strong). In spite of this, however, they go on to assert, we do "perceive" objects, which, again, are real; and it is this distinction between what we immediately experience, *i. e.*, sense data or images which are not real objects,<sup>3</sup> and the real objects which we none the less perceive, which is the chief characteristic, and the fundamental defect, of these realist theories; upon this point the following criticism chiefly centers.

With the premises formulated by Dr. Strong (p. 593) all realists must agree; the question here raised is whether we are compelled to postulate, together with real objects, other entities having the characters of "sense data" or "images." To raise this point is not necessarily to question the existence of sensations as such. Dr. Strong seems to regard images and sensations as identical (p. 572). I should prefer to make a distinction between them, but I endeavor to use the term "images" strictly in the sense defined by Dr. Strong.

It is obvious that these theories are alike in being an attempt to deal with the problem presented by the conflict between appearance and reality, and it is also obvious that even if that problem be successfully solved, it is only at the cost of our being saddled with a

<sup>1</sup> "The Problems of Philosophy."

<sup>2</sup> This JOURNAL, Vol. IX., pages 533, 561, and 589.

<sup>3</sup> "Problems," page 23.

fresh problem equally difficult—that of the relation between what we immediately experience and what we perceive; between sense data or images and real objects; and it is further obvious that any such solution, even if true, is felt on the face of it as unsatisfactory, in so far as it still removes us from direct and intimate contact and relation with reality, which is (Russell) reached only by inference.<sup>4</sup> It throws a veil of illusive phenomenalism over everything with which we are in continual relation, and we feel instinctively, if unreasonably, that the only completely satisfactory philosophy is one which will find reality directly in what we see and feel and handle, which will justify our belief in an unmediated relation with the real world; and if we carry the idea into religion, with real Deity.

We may, of course, argue that such a philosophy, however desirable, is unattainable; but we are not entitled to assume this to begin with, and while it remains possible effectively to criticize theories involving the use of images and sense data, the way remains open for an advance to a more satisfactory realism in a truer sense of the word.

Dr. Strong deals directly with the relation between image and object, and what follows is mainly a criticism of his views on this point, and also of his remarks on the nature of consciousness in general. It may be hypercritical to point out that he himself is not quite consistent in the use of his terms; but in questions of this kind where we are seeking to ascertain the exact nature of certain processes and entities, it is essential that the terms chosen to denote these processes and entities should have clearly defined meanings assigned to them, and be used with those meanings and no other; otherwise we but substitute a new type of confusion for the original type. "Nor do we say," says Dr. Strong (p. 534), "that we are 'conscious' of the fire." But we have (p. 536), "a reader is less clearly conscious of his book." But Dr. Strong contends that "we are properly said to be conscious only of our own states of mind" (p. 534), and to this meaning he in the main adheres.

Turning to Dr. Strong's theory of images and their relation to objects, we find that he makes all the following assertions about them. (1) Images have form (rhomboidal or oval) and also color (p. 538). They are "plainly extended" (p. 563). (2) The image is not perceived (p. 538), but is essentially open to introspection (p. 572), *i. e.*, as distinct from perception. (3) It is "in perception," and "in experience" (p. 538),—more definitely it is "the part of the mind which enables it to contemplate" (p. 540); it is "a form of feeling" (p. 592) and a psychic existence (pp. 589 and 572). (4) Images are not parts of the object, but aspects or views of it (p. 543).

<sup>4</sup> "Problems," page 17.

(5) The object is *quite other than the image* (p. 544). (6) But none the less "the *object is fundamentally of the same nature as the image, whatever that nature may prove to be*" (p. 567).

How is it possible to reconcile these attributes and functions of the image? If we take (3) and (1) we have that a part of the mind has color and is extended, which can only mean that the mind is in part colored and extended; and (4) is, further, an aspect of the object. (5) and (6) directly contradict each other; or if we adhere to (6) alone, then *the object is a psychological existence*, since that (3) is the nature of the image; and the whole treatment is an excellent example of the philosophical quagmire which engulfs any realist who sets out by divesting the content with which we are in immediate contact of all objective, true, and final, reality.

We have a similar instance of looseness in the use of terms on page 563. We have seen that an image is not perceived (p. 538); what we perceive is an object. Thus we have precise meanings given to "image," "perceive," and "object"; but Dr. Strong introduces (p. 563) a term quite new to the discussion—"discover,"—with no attempt whatever to fix its meaning—"we discover the disc" (*i. e.*, image) "as certainly as we discover the moon" (*i. e.*, object). Hence we "discover" the object, and *ex hypothesi* we perceive the object; also we "discover" the image, and, *ex hypothesi*, we do not perceive the image; *i. e.*, we "discover" both what we perceive and what we do not perceive. What, then, is this doubly inclusive process of "discovery"? Is there any process possible other than perception of an object? If "discovery" be synonymous with perception, how can we "discover" the image? If it be not so synonymous, how can we "discover" the object? It is useless seeking to find the meaning of terms such as consciousness by using terms like "discover," whose meaning in itself is not already fixed and definite. If I say, "It is a brilliant day," and you reply (with Lewis Carroll), "Well scarcely brilliant, but certainly brillig," I might agree—if I know what you mean by "brillig"; so if you say, "we do not perceive the image—we 'discover' it," again I might agree, if I know what you mean by discover.

From this account of the nature of images, we proceed to their function—the manner in which we obtain by their means our knowledge of objects—what Dr. Strong calls (p. 590) "cognition," in its form of sense perception; here the medium is the image. But "there is nothing in the image itself which points to an object" (p. 592). Cognition is a complex process in which the image plays only a part.

Briefly, Dr. Strong's theory may be put thus: (a) The image is at the center of the body—surrounded by the body (p. 596); more definitely "in the brain, held in position towards the



object by a set of definite physical relations''<sup>5</sup> (p. 597). (b) The qualities of the object, considered as existences, are in the image, from which they are "projected" on to the object, in which, in cognition, they appear (p. 598); but (p. 599) "that in the image which guides action is solely what has *come through to it* (the image) of the object"; which seems to mean that the qualities come to the image from the object, and are then projected back to the object! (c) Finally, "the image is pronounced to be in, if not to be, the object" (p. 599); this constitutes "projection." This projection of the image is a conferring of depth, which is not as such a character of the image (p. 599). The image with its motor promptings explains what we perceive (p. 600).

These are the main principles of Dr. Strong's theory of the function of "images." Can they be maintained conformably with Dr. Strong's other assertions?

(a) "The image is in the body<sup>6</sup> or the brain." This can be known only through introspection, which is our sole avenue to knowledge about images as such (pp. 534 and 572). But does the closest introspection give this verdict?

Take the most favorable case, that of the after-image of an intense light. This we know to be an image,—it is not an object in any degree. But it certainly does not appear to be in the body at all, not even to the degree in which a pin-prick appears to be in the body; it appears to be at a distance in space, exactly as does any undoubted object; and so does a very faint odor. It seems impossible to advance any evidence for this assertion, except the necessities of theory.

(b) A stock difficulty in realist theories of perception is (crudely stated), "How does the object get into, or before, the mind? How do these totally different entities come into relation with each other?" It is a difficult problem, and Dr. Strong scouts intuitionism as any solution (p. 597). But does his account of the process simplify the problem in the least? The object causes the rise of the image (p. 593), to which its characters pass through; then they are projected back upon or into the object. Each step in the process raises questions as difficult as any in the old stock problem, even if there were undoubted evidence for each of the stages; and this (a) we have already found questionable.

(c) "This projection of the image is, above all, a conferring of depth," *i. e.*, presumably, in the sense of objective, stereoscopic, solidity, both as regards real space and real objects. Dr. Strong

<sup>5</sup> That is, physical relations exist between psychical existences and physical bodies. Would any physicist accept this view at all?

<sup>6</sup> They must not be confounded with retinal images—sound, fragrance, cold, are "images" (page 538).

emphasizes this stage in the process; but how, on his own theory, is such a conferring of depth possible? On that theory, can an image not possessing depth acquire it? Depth is a quality of object, but not of images. Now the other spatial qualities of the object come through from it to the image (p. 599), both its shape and its size; why not, then, also, the more important quality—depth?

But suppose this view to be accepted—then the whole theory is in still worse case. We confer depth—we perceive space and objects as solid—as tridimensional; that is undoubted, however we may seek to explain it; but how, on Dr. Strong's theory, can we acquire the notion of depth at all? On that theory, images bring about perception in all its modes and content, and chiefly because the characters of the object pass through to the image. But depth does not; hence we can not get the notion of depth from the image; and what other source have we? We can not directly experience the object; our whole cognition of it springs from our experience of images; and therefore any character which images lack can only be the fabrication of our own subjective mental processes; no other alternative is conceivable. But Dr. Strong would not accept that view; and he shuts himself off from the only other possible alternative, and so falls into a dilemma which is fatal to his whole theory, so far as depth is concerned. In fact, his whole treatment of depth is peculiar. "It is something the mind grasps in cognition, not a feeling, as length and breadth" are (p. 572). Well, let us admit this, and imagine ourselves looking at a cube. We perceive it has length, breadth, and depth. *Ex hypothesi* the length and breadth are feeling; the depth is not. But turn the cube round through 90°; its former length and breadth are now its depth, and *vice versa*, i. e., feelings are transformed into non-feelings, and *vice versa*, which is, perhaps, the most curious implication yet involved in the entire theory.

But "depth," after all, requires no such privileged consideration. For any realist system which accepts extension as real, depth is merely extension in any plane not parallel to the vertical plane in which lies the straight line joining the foveæ of the observer's eyes at the time of observation. How we come to perceive depth is certainly a problem; but the nature of depth itself presents little difficulty. In short, any realist theory based on "images" or on "sense data" is beset by a number of difficulties and contradictions inherent in the theory, and from which it can not be freed by any ingenuity in reasoning. But even if we accept the theory, even should it be proved to be well-founded in the facts of experience, we are no freer from the pressure of equally difficult problems. We should still be bound to ask:

How can we conceive objects to give rise to images? If we regard

object and image as being of the same fundamental nature (*i. e.*, psychical, since the image is so), we surrender realism; if not of the same fundamental nature, we simply raise under a new guise the old bugbear of philosophy, the passage from the physical to the psychical, without in any degree explaining it.

If images be psychical existents (with pleasures, pains, emotions, and desires) (p. 572) why do we, in the case of images, remain oblivious of them as images and become aware of objects? while at the same time we are exclusively aware of the other psychical existents, purely as such, with no reference whatever to objects of any kind. Something more seems necessary than a mere postulation of a "projective" function.

How do we become aware of the images at all? Dr. Strong says (p. 539): "One can point out fact after fact about the image;" similarly we can point out fact after fact about an object; and this Dr. Strong would explain by the image theory. But how are we to explain our ability to point out facts about the images themselves?—surely a problem of equal importance.

A more fundamental question is, how do we ascertain the characters of the object, *as distinct from the characters of the image?* and, especially, when the characters of both are identical. Mr. Russell says<sup>7</sup> "the real table must be an inference." What are the grounds of the inference, and what the details of the inferential process? Snow as object is white; so is the image by means of which I perceive it; but I *introspect* the whiteness of the image, while I *perceive* the whiteness of the snow,—both colors being, nevertheless, indistinguishable (as colors). Wherein consists the difference between the processes? Then again, I have a series of images whose forms are oval, circular, oval again; but the object, I say, is circular; why do I thus select the circular from the other forms of the image, and call it the form of the object? How and why do I distinguish the *perceived* circularity of the object from the *introspected* circularity of the image? What is the difference between them, as circles? If there be no difference, how distinguish between one as the shape of the object and the other as that of the image?

If it be replied, "But we never do experience an actual circle or a true square" (while nevertheless we *infer* circular and square objects) then the question becomes, "How, then, do we obtain the ideas of circle and square at all if we never experience them to begin with?"

Dr. Strong's paper is called "The Nature of Consciousness"; and here we find the crucial and fundamental defect of his views; "Many writers," he says (p. 533), "deny that consciousness exists,"

<sup>7</sup> "Problems," page 17.



but he himself would admit the existence of consciousness (*a*) as denoting the whole formed of "images or sensations with pleasures, pains, emotions, and desires" (p. 572), or (*b*) "as a special case of awareness—the awareness of the states of mind" (p. 534), or as it is expressed (p. 589), (*a*) consciousness as "feeling," (*b*) consciousness as "awareness"; awareness being then defined as "bare knowledge of acquaintance." But these two views of the nature of consciousness are quite irreconcilable with each other—we can not hold both, even if we can hold one of them. As (*a*), consciousness is a content—a totality—a series; as (*b*), it is our relation to this content or totality, whatever term we may choose to denote this relation—whether "awareness" or some other term. That will not alter the fact that it is impossible for consciousness to be both a content and also our relation to that content,—the two are absolutely different from each other, and we can not use the same term to denote both. If we use consciousness to denote the one, we must find some other term to denote the other. Dr. Strong must make his own choice, but he can not hold the two meanings as alternatives.

This leads to the fundamental defect in Dr. Strong's view of consciousness. We must, of course, admit the existence of a totality, a series, of sensations, pains, pleasures, and emotions; and we are at liberty to use the word "consciousness" to denote this totality if we choose; but that leaves absolutely untouched the essential and final problem of philosophy, so far, *i. e.*, as philosophy is concerned with perception and epistemology in general. That final problem is: "What is the nature of our relation to this content, and also to the other contents of which we are aware—objects, conceptions, and volitions? and how does this relation come into being?"

Dr. Strong's theory seems to contribute little to the elucidation of this problem; to adhere to the definition of consciousness as a content is to neglect the question, "How do we become aware of this content?" and, on the other hand, the theory of images and sense data in itself is so full of inconsistencies and difficulties as to do little, if anything, to simplify the problem, and even were it completely adequate to account for consciousness in its second meaning of awareness, the limited definition of awareness adopted (p. 589) would render it applicable to only a part of the whole problem.

In fact, it appears hopeless to construct any realistic theory of perception and knowledge by having recourse to sense data or images, regarded as being the content with which we are in direct contact, and at the same time as not identical with real objects, but as a sort of *tertium quid* between the knower and the real objective world, or in the relation of a photograph to its original (p. 561). The parts which sensations, percept, and object play in the process of knowing

still require accurate elucidation; but the principles upon which a sound realism must approach the question seem capable of being determined. No realism will be finally satisfactory which excludes objective reality from *all* with which we are in immediate relation, and assigns it to a region which we can reach only by inference or other indirect process. Nor does it seem impossible to assert that part, at least, of that with which the knower comes into direct and immediate relation is itself the objectively and finally real.

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### CONCEPTS AND EXISTENCE

PROFESSOR PITKIN'S clear and excellent article on "The Empirical Status of Geometrical Concepts"<sup>1</sup> introduces a theme of exceptional interest, and is a helpful contribution to its discussion. Instead of torturing possible minor points of difference, I much prefer to recognize a substantial measure of agreement, and to follow up in a casual way the line of suggestion that Professor Pitkin has initiated.

Mathematics has been quite long enough the ally of poetic and flesh-averting metaphysics. The claim that the propositions and concepts of geometry are blessed *νοούμενα*, noused things, having nothing to do with sensed things, except the task of redeeming them, has been growing quietly antiquated. Nevertheless, a certain mystery remained. It is well, certainly, to fill up the gulf between noused things and sensed things on the side of perceptibility, but this, I fear, will not pacify the unhappy ghost, for what I may call the despiritualization of geometry suggests that the real problem is that of the existential status of universals. If mathematics has had many a message for theology, has it not one now for realism? Let the noused things be not exclusively *νοούμενα*, but let them be also, or at least some of them, sensed things; the more important, the originally Platonic, distinction remains, the distinction, namely, between a universal and an individual.

The history of philosophy shows nothing more curiously characteristic than the determination, century after century, to minimize the authority of sense-perception, and nothing is more readily intelligible than this apparent perversity. Any one who seeks to prove that the things we empirically observe are not "really" what we empirically observe them to be, must begin by discrediting our natural organs of observation. The spirit of apologetics, conscious or unconscious, that has inspired so much of European philosophy demands the faith that eyes and ears are bad witnesses. If I would have you believe that the

<sup>1</sup> This JOURNAL, Vol. X, page 393.

horn of an automobile is the flute of Marsyas or the lyre of Apollo, I must show you that our hearing is finite and committed to error. Plato had his own reasons, no doubt, for identifying the one and the many with the invisible and the visible, respectively, but the exaltation of what eludes perception in Plato's case and in the case of supernaturalism generally is no mystery. The philosophy of other-worldliness must needs be dialectical; it could not possibly be empirical. Geometry is also dialectical and the philosophy of it has been attracted to other-worldliness somewhat as words in Latin syntax are attracted into cases where they do not naturally belong. The point to notice, however, is that what gives to concepts their peculiar unity is not the circumstance that they are invisible, but the fact that they are *illustrated* to perception, as Professor Pitkin so well shows, as often as we assemble the material conditions that conform to what the definitions prescribe. Whenever we do so, however, the perceived object includes not less, but more than the definition. We can never see merely the concepts; the ridge of a distant roof seen against the sky may, to be sure, conform to the requirements of a straight line. So may the edges of many other things, and we can say without being misunderstood that we see a dozen instances of straight line or a dozen straight lines. The latter would probably be the more natural way of putting it; we should never, for instance, in natural conversation, say, "I see a dozen specimens of the genus horse": We should say, "I see a dozen horses." But whether it be straight lines or horses, what we observe is a repeating character. We certainly perceive individuals which are like one another in certain respects and different in others. Each individual comprises what we may call essence and accident, and I feel pretty confident that without the accident the essence will forever elude perception.

Let the accident be the orange color of a roof otherwise red, in the light of a sunset. We may say it is the same as the color of a certain silk dress, or we may suddenly realize that it is just the color we want for some decorative purpose, and we may set out to match it. We are not, I suppose, seeking to duplicate a roof that looks thus and so under certain atmospheric conditions; we are using a natural power in a natural way, the power to prefer and to select. And we might, in the same way, select, *i. e.*, abstract, any other single feature that we can distinguish, such as a straight edge. Both the color, however, and the line, might have been discovered in different company, that is, the particular color is as unessential to the line as the line is to the color; each is accident with respect to the other. But each can be discovered by perception only in conjunction with *some* other. Now for those who have ceased to look to logic for the miracle of creation, and who admit that "eyes and ears," though leaving much



to be desired, are all the witnesses we have as to what exists, and how, there will be no occasion to deny either of two things: first, that any specimen of existence is as complex as we observe it to be, and perhaps much more so; and secondly, that we can notice and isolate any single feature of a thing or things, making, thereby, an idea. Having selected it, its empirical company becomes material accident; its own concrete empirical status is irrelevant to the content of the selected abstraction; but are not the details of this empirical status, speaking somewhat awkwardly, the conditions of existence in the specific case? May we not say, and would it not be a truism, that existence is the empirical fund of accident which gives a selected property its empirical status?

One of the many good things Professor Bergson has said is that an idea becomes clear by being used. And the adequate definition of a straight line used by geometers is one that has been gradually reached. Is it likely that such a definition results from the desire to state what we see when we see a straight edge, or is the definition something to be used in geometrical operations, and something, the content of which has reference to its geometrical business?

Some confusion may lurk in the term "definition of a line." In geometry, the line *is* the definition, although in architecture it is a straight edge of structural matter. We speak of the plan of the roof, the lines of the roof, the system of lines, etc., but what is a definition doing with the preposition *of*? The selected property *of* a thing becomes an instrument in geometrical operations. Being made an idea, through separation from its existential accidents, and being handled as an instrument in certain technical operations, it is now defined in terms of its implications, for how else should any instrument be conceived?

It is not necessary to lay stress upon the instrumental character of geometrical concepts. I am chiefly interested in recalling that old-fashioned property of all concepts, their universal character as contrasted with the individual character of any particular incorporation. And yet, might we not expect that geometrical concepts would appear in a very different light to the one who pursues the path of research and discovery from what it does to the one who learns and perhaps teaches the mathematical conclusions of others? In other words, research and exposition, or discovery and demonstration, are two very different things. During research concepts are flexible, subject to the emphasis that the particular problems suggest. After the satisfactory termination of a particular inquiry, the concepts concerned are necessarily precise. Thus all those who are not original investigators easily get the impression of finality, an impression which those that make the science in question to progress are probably far from sharing.

In the presence of philosophical mysteries that have become classical it is frequently worth while to ask what the universe of discourse was in which a problem first appeared. The distinction between noused things and sensed things declared to involve permanence and unity for the one and mutability and multiplicity for the other, arose, as every one knows, as part of an argument for teleology. In this universe of discourse descriptions in terms of "the one and the many" are quite simple and intelligible. When, however, we abandon teleology, and carry the distinction over into the region of mere existence or fact, we may be *doing* something in an entirely proper way, but when we come to philosophize about it, we should begin by remembering what we have done.

Any one may, if he likes, marvel at the fact that nature so endlessly repeats itself. The repeating facts are what Poincaré has called the subject matter of science, and naturally enough, since it is only the fact that things happen again and can be made to happen again that makes it possible to understand how particular things happen. It is nature's repeating aspect that makes it possible to distinguish between the right way and the wrong way of doing anything, that makes it possible to learn anything by experience, that makes memory of any use and intelligence conceivable. Plant the best laboratory imaginable in a world where nothing ever happens as it has happened before; the laboratory will return to its ancestral dust before its occupants discover anything except the futility of research. Fortunately, however, we live in a world where an habitual behavior of things can be learned. We can diagnose situations more or less successfully according to our measure of acquaintance with the factors that contribute to make them. The repeating processes are equally well characterized whether we call them laws of God or laws of nature. Every repeating process, or that which is repeated, the repeating character, is a "one" established in nature, not a teleological "one," to be sure, but the type of "one" that underlies all actual purposive and reasonable behavior, as well as all scientific description. Here we have two types of "one," the "ones," the repeats that we discover in nature, and the "ones," the purposes of any one knowing and depending upon the former. The "ones" of the second or value class are, in a loose sense, functions of the "ones" of the first or the nature class, and the two classes may be symbolized by  $I_V$  and  $I_N$ , respectively. Now the type that the platonic philosophy was concerned with was  $I_V$ . As Santayana so well says, "Plato had no physics and the physics of Aristotle was false,"—false because Aristotle identified teleologically  $I_N$  with  $I_V$ . The tradition that concepts are noused and not sensed comes from a philosophy that made that proposition originally about  $I_V$ . It did not make it about such a

property as is common to the line of the horizon (if we don't look at too much of it) and the flight of a bee. The singleness of direction is in each case a perceived property, no doubt; it is  $I_N$ . But now, isolating this property, and wishing to make it a feature of architectural constructions, how shall we describe it? It will not help us to say a straight line is a bee line. We must describe it after the *if—then* fashion. In any case we seek a formula, a concept for bringing a straight line into existence. When we have done so, we have another object which repeats the property common to the horizon and the bee's flight, and we can say that the formula for singleness of direction in the measurement of plane surfaces describes also the singleness of the bee's direction. Is there, however, no difference between the formula of a railroad curve and the curve of the track when laid down? It would be a little unusual to say we perceive the curve of a track that doesn't yet exist. The curve is, meanwhile, the plan of the engineer in charge of construction; it is an  $I_V$ .

Can this  $I_V$  be presented to perception? No doubt. We can load it with the necessary existential accidents. We can produce an individual according to its specifications.

This brings us back again to the emphasis upon universal and individual. If  $I_V$  is to be presented to perception at all it must be by virtue of *some* sort of construction or of natural process. If we are to construct a formula of the *if—then* type to describe the universal, must it not be one according to which the existential accidents must be distributed if they are to embody and render perceivable the concept in question? Must it not, *i. e.*, be a formula for construction, construction which may, of course, never be carried out?

To sum up: the concept is always less than what is perceived. As a selected property, existential specifications are irrelevant to it. If it happens to become an instrument useful in some particular class of operations, it will, as such, certainly be defined in terms of its implications, in terms of the *if—then* relation, and its status becomes dialectical. But that which now appears in a definition reached after many years of highly expert use is surely a different thing from the straight edge of a particular object. Rules for construction need not be identical with empirical descriptions of what is beheld after construction.

The ancient distinction between noused things and sensed things can not be made quite to disappear. It continues to be simple and intelligible in the universe of discourse that originally produced it. That which shall exist, though it does not yet do so, is invisible for the good reason that it does not yet exist.

The teleologist is under a dialectical obligation to say that his concepts are primarily noused things and not sensed things. The realist,



if he banish empirical teleology from his universe of discourse would seem to be under an equally dialectical necessity of saying just the reverse.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Fitness of the Environment: An Inquiry into the Biological Significance of the Properties of Matter.* LAWRENCE J. HENDERSON. New York: The Macmillan Company. 1913. Pp. xi + 317.

"To what extent do the characteristics of matter and energy and the cosmic processes favor the existence of mechanisms which must be complex, highly regulated, and provided with suitable matter and energy as food? If it shall appear that the fitness of the environment to fulfill these demands of life is great, we may then ask whether it is so great that we can not reasonably assume it to be accidental, and finally we may inquire what manner of law is capable of explaining such fitness of the very nature of things" (p. 37). This is Professor Henderson's statement of his problem. The origin of the problem in the author's mind was the connection between physical and chemical properties of simple substances, and the organic functions which they serve. The key to the peculiar conditions of equilibrium between acids and bases in blood and protoplasm is to be found in certain characteristics of phosphate solutions and of similar solutions containing carbonic acid. Of all known substances, phosphoric acid and carbonic acid possess the greatest power of automatic regulation of neutrality.

"One does not like to accept a fact of such far-reaching importance as mere chance, and yet no other explanation was at hand. . . . Natural selection could not be involved. . . . But . . . this is no unique instance of a property of a simple substance automatically serving a very useful purpose in the processes of life.

"Then . . . came the realization of the reciprocal character of Darwinian fitness, and at once the whole difficulty was resolved."

After two chapters, one on "Fitness," the other on "The Environment," in which the nature of the problem and the proposed solution are discussed, the book takes a view of the essential physical and chemical constitution of the universe considered in its aspect as environment of life; this on the one hand; and, on the other, postulating certain essential characteristics of life, it interprets the mutuality of the fact of fitness between environment and life as genuine reciprocity or essential coimplication between them. The characteristics of life which are singled out as useful for the argument and at the same time as fundamental are these: life is a physico-chemical mechanism essentially complex in structure and function, durable (and therefore regular and regularly conditioned) and active (metabolic) (pp. 31, 32).

The physico-chemical characteristics of water, carbonic acid, and the

carbon compounds are taken up one by one and their absolute and relative magnitudes considered. The possible utility of such properties is then estimated. Finally, the various favorable qualities of water, carbonic acid, and the carbon compounds are grouped together to see if they constitute a unique *ensemble* of fitness, among all possible substances, for a living organism. This evidence, in the main, constitutes Chapters III., IV., V., and VI. Chapter VII. concisely analyzes and summarizes the evidence, and the last chapter, Chapter VIII., entitled "Life and the Cosmos," draws the author's metaphysical conclusions concerning the nature of the evolutionary process, with discussions of vitalism and Bergson's evolutionism.

The wonder of life's mastery of its conditions seems, to those who have best expressed themselves about it, to consist essentially in the incredible ingenuity either of life itself or of an artificer who could have preestablished such an infinitely complex and admirable fitness between life and its conditions. Certainly life, even in lower forms, does not merely conform to its conditions, as in the development of cunningly suitable anatomy; the mastery includes more lordly methods, the reforming of conditions to suit life. But no matter—the wonder in both cases alike is the infinite ingenuity manifested; for even in bridling nature the successfulness of it always corresponds exactly to the degree of insight into nature. Life stoops, in this sense, even to conquer. Whether the miracle comes to one emotionally, as it comes to the blessed children of Kipling's and of Stevenson's creation, who cry, "The world is so full of a number of things, I'm sure we should all be as happy as kings," and exult in the provision by good Mother Nature for such diverse wants of so many creatures; or whether the miracle engages the intellect rather, the miraculous thing is always the intricacy of the correspondence between life and its conditions.

Henderson, like Bergson, conceives that this marvel gets its marvelousness from a false way of distinguishing between life and its conditions. Life's actual taking form in living beings,—in other words, the fact of organization—as Bergson shows, has a difference from manufacture (of a machine, for instance), a difference which takes from biological fitness all ingenuity, even of a Creator. For a manufacturing Creator were ingenious (as Mother Nature is regarded by the Kipling nurse in the song) only if God, like Mother Nature, is supposed to *make* things, to build them. ". . . The creation of the visual apparatus is no more explained by the assembling of its anatomic elements than the digging of a canal could be explained by the heaping-up of the earth which might have formed its banks. . . . When we wonder at the marvelous structure of an instrument such as the eye, at the bottom of our wondering is always this idea, that it would have been possible for a *part only* of this coordination to have been realized, that the complete realization is a kind of special favor. . . . We see something positive in this coordination, and consequently something fractionable in its cause,—something which admits of every possible degree of achievement. In reality, the cause, though more or less intense, can not produce its effect except in one piece, and completely finished. According as it goes further in the direction of vision, it" [produces a more complex structure]. "For the form of the

organ only expresses the degree in which the exercise of the function has been obtained.”<sup>1</sup>

Bergson's conception of the meaning of structural determination is that it is an expression or translation in negative or inverse, of function. But he vacillates, with confusing results, between a reciprocity of two mutually alien orders of energy (life and inert matter), on the one hand, and the denial of matter, on the other. Henderson's use of the conception of reciprocity is clearer. If life and matter are mutual inversions, the relationship is a mystery, on Bergson's principles, a mystery of the vicious, hopeless sort which is neither original nor analogical—it is not ultimate, yet it has no leading for thought. It is either the Platonic interactiveness between being and non-being, or else it is the Cartesian irreducible dualism whose discovery is due to the necessity of reducing it. Henderson's idea is that, in metabolism, we have not two principles (one real and the other unreal, according to Bergson!) one of which, positive reality, life, impresses itself upon, or expresses itself by means of, the other, inert matter; the manifestations of energy are not independent of each other. Energy is one. The properties of matter, and the course of cosmic evolution, are so intimately related to the structure of the living being and to its activities that the whole evolutionary process, both cosmic and organic, is one, and the biologist may rightly regard the universe in its very essence as biocentric. This implies not only that one may learn the true nature of the universe from the biological point of view, as the environment fit for life, as well as learn the true nature of the organism from the evolutionary point of view as the agent fitted to exploit its environment; it implies a profounder idea, namely, that a teleological tendency works steadily through the whole process of evolution, a tendency at the very origin of things, a necessary associate of mechanism. Matter and energy have an original property, assuredly not by chance, which *organizes* the universe.

I say this is preferable to Bergson's conception of evolutionary process because whatever dualism it involves, between matter and purpose, is an aspective and not an ontological dualism. If it is a mystery that teleology should be a “necessary associate” of mechanism, it is an *original* mystery, precisely like the mystery that the east is a necessary associate of the west. It means that, when you contemplate the nature of the concept “mechanism” or of the concept “teleology,” with thoroughgoing, persistent attention to its necessary implications, you find in each the other necessarily implied, as you find the east necessarily implied in what you mean by the west.

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*The Masters of Modern French Criticism.* IRVING BABBITT. Boston and New York: Houghton Mifflin Company. 1912. Pp. xi + 427.

This is a dignified and important book, and deserves a high welcome: all the more when we contrast its style, its interest in ideas, and its width

<sup>1</sup> Bergson's “Creative Evolution,” pages 93-96.



of outlook with the literary studies that usually proceed from American universities. Here is a book without that preoccupation with scraps of texts and philological fragments, that crass dullness and imperviousness to ideas on the one hand, or that crude journalistic spirit, not even deserving the title of dilettantism in any noble sense, on the other hand, which have for the most part characterized the work that has come from our institutions of higher learning. I am thinking, of course, more especially of the field of "modern languages" in its academic sense, in which it might almost be said that no work of creative scholarship has been accomplished since the days of Child and Ticknor. In an age when, as Sainte-Beuve said, "it seems that to edit an old book already published, or to print some insignificant scrap for the first time, is a more serious claim to esteem than to have a style and ideas," it is particularly fitting to give a cordial welcome to a book which displays an interest in style and which makes a valiant effort to grapple with ideas.

If we were to sum up the book in a phrase, we should say that in it Brunetière speaks English. A nature so essentially French as Brunetière's could not use another tongue without altering its temperament in some measure; and Professor Babbitt, it is only fair to say, exhibits the divergence that such a "sea change" imposes on him. But it is the tradition of French academic criticism that speaks throughout the book. The very critics selected are those that Brunetière himself would have selected as masters of his own art in his own country; the method of dealing with them is the method fixed, as it were, by him; the wailing cry for lost traditions, for old standards, for set *genres*, is unmistakably his. In both Brunetière and his American disciple we have the same confused dualism which attacks scientific positivism in literature and which in the very same breath defends the wholly positivistic theory of the literary *genre*. Both are moralists, controversialists, pamphleteers, rather than literary critics; both exhibit the same suspicion of the imagination on its purely creative side.

Take, for instance, Professor Babbitt's essay on Scherer. The reader will search in vain for a single allusion to literature or art, to the life of the imagination in any of its forms. He will find, instead, extended summaries of Scherer's views on relativity and the absolute, on progress and humanity, on Hegel and Napoleon. I have no fault to find with these admirable paraphrases of an author's thought on subjects that concern men at so many points, and merely express a naïve wonder at a theory of literary criticism that can be so inclusive as to find an interest in every subject under the sun except imaginative literature.

In the two chapters on Sainte-Beuve, we might expect to find other preoccupations. Here indeed, we say, criticism will find and express itself; contact with this delicate and masterly spirit will encourage and inspire an attitude more purely esthetic. But what do we actually find? It is the author's theory that the relationship of a great writer with his literary predecessors has little or no bearing on his own peculiar genius; yet here we find the most minute analysis of Sainte-Beuve's relations to his spiritual predecessors, to La Bruyère, La Rochefoucauld, Bayle,

Horace, Montaigne, Vinet, and the rest. Professor Babbitt is constantly protesting against the tendency of criticism in "ceasing to be literary and becoming historical and biographical and scientific"; yet here we find the emphasis wholly laid on Sainte-Beuve's relation to his time, to romanticists and naturalists, to anything and everything, in a word, except his own peculiar art as a critic of literature. His actual criticism of any poet, novelist, or other writer is passed over lightly with the quotation of an *obiter dictum* or an epigram; there is no attempt to analyze a single essay of the greatest critic with whom this book has to deal.

We assume that this is what our author means when he tells us in his preface that he has not tried "to criticize criticism, at best a somewhat languid business, but to criticize critics, which may be a far more legitimate task." But what is it fair to ask of an essay on any great literary critic? His theories of Hegel and Napoleon, of progress and humanity, or his successes and failures in understanding and interpreting the great writers? May we not ask to have questions like these answered for us: How has he done his work; how has he made us understand the greatness of a great book or see the littleness of a little one; what do art and criticism mean for him? But we might read these two chapters on Sainte-Beuve from start to finish without knowing the art of a single one of his own essays, his method of approaching a single author concretely, his genius in unraveling the difficult tangles of another man's genius. For this task of criticizing critics there is needed the same insight, critical insight, as in the original operation of the critic in criticizing poets and novelists; and the fact is that Professor Babbitt is entirely lacking in this insight. He is a defender of tradition, an historian of ideas and tendencies, a moralist, a popularizer of general ideas: anything and everything, in fact, except a critic or a student of criticism.

His book suffers also in another way, from the lack of a unified attitude toward his central theme. The fact is that Professor Babbitt has no esthetic theory. He has much sensible advice to give on questions of critical practise: that criticism to-day needs standards, that judgment and selection must be added to taste, that tradition and the classics need more attention, that scientific positivism must be destroyed, that critical appreciation must be curbed this side of "superlativism." These he espouses with a masculine eloquence worthy of the best traditions of academic criticism. But to the questions—What is art? What is literature? What is criticism?—he offers no answers; and he has no answer for the very simple reason that he has never asked himself any of these questions. His utterances are controlled, not by any unified or consistent thought in the field of esthetics or critical theory, but by his personal bias in respect to the practical needs of the culture of to-day. In fine, if we might give the book the extended title which was common in works of its kind in the seventeenth century, it would read somewhat after this fashion: "A Discourse on the Intellectual and Literary Troubles of Our Times: In the form of a running comment on certain modern French critics; Together with a discussion of the

various confusions of thought current in our day; To which the author has added some of his own."

The volume concludes with a valuable list of modern French critics and their works, which makes no pretensions to completeness, and which omits names of more or less importance such as Feugère, Monselet, Fromentin, Marc Monnier, Ganderax, Girardin, Rio, Séailles, Hello, Boissanade, Dubois, Demogeot, Spronck, Gustavé Kahn, and Catulle Mendès.

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*Die Aufgaben des Lehrers.* WILHELM JERUSALEM. Wien und Leipzig: Wilhelm Braümüller. 1912. Pp. xii + 392.

This, the latest volume from this many-sided and productive writer, has come, he declares, from next his heart. Entire absence of dogmatism, a fervor of conviction, and the sympathetic tone of an older colleague combine with clearness of philosophic insight and confidence of handling to make the book exceedingly stimulating. Jerusalem invites comparison with Matthias's "Praktische Pädagogik" and with Münch's "Geist des Lehramts." The first is, however, rather the critical inspector writing *vom grünen Tisch*; the latter, the university essayist grown gradually aloof; both lack Jerusalem's vitality and directness, his intimacy of appeal, and particularly his consistent psychological and sociological point of view which expresses a new emphasis in German educational writing.

Frankly taking his text from Professor Royce's "Philosophy of Loyalty" to the effect that a genuine personality may be developed only through voluntary dedication to a great and significant social task, he summons the *Oberlehrer* to the ideal interpretations of his profession. The burden of progress and achievement is laid upon no social or economic scapegoat, but directly upon the teacher himself, whose duty it is more thoroughly to spiritualize his work and to discern its peculiar possibilities and dignity. For this, two great syntheses are necessary. The first is that of scholarship with the pedagogical attitude, and here Jerusalem ably sets forth the real significance of the change which the secondary teacher has undergone during the past two decades. Paulsen's view that the *Oberlehrer* must continue as an independent investigator is emphatically rejected in terms that certainly express the belief of a majority of German teachers to-day.

"I must declare it unmistakably as my firm conviction," says Jerusalem, "that broad and intelligent assimilation of knowledge and the continual increase of positive acquisitions directly applicable in school are more important than independent production in a narrowly limited field." "The only correct conception of our professional duty is that we place science and learning at the disposal of the school." Hence "among the tasks common to every teacher the scientific study of education is the first and most important." The second synthesis is that of teacher and state official. With our rapidly increasing socialization this



has large importance even for Americans. To maintain as teacher one's indispensable freedom of action and his fruitful criticism of his superiors together with a loyal recognition of his personal subordination to the just demands of the larger whole is a delicate task as yet imperfectly realized. Further syntheses of receptivity and productivity, of many-sidedness and thoroughness, of authority and love, are discussed in a keen but optimistic vein.

For Jerusalem the modern pedagogy is wholly empirical, evolutionary, and social. A "liberal" education is, historically, simply a social demand varying in content according to circumstances. All factitious purposes aside, the task of the secondary school to-day is to train to "mental independence and moral responsibility." This end is sought through intellectual, esthetic, socio-ethical, religious, and philosophical cultivation. For the purposes of the first two elements mathematics, natural science, and philology are prescribed—the usual programme of the *gymnasium*. To ease the gathering weight of these branches Jerusalem makes the fruitful suggestion of a division into disciplinary and inspirational subjects, the pupil to be held to a strict account in the former, while in the latter responsibility devolves almost solely on the master. This incidental proposal brings Jerusalem's programme for the teacher into strong relief. A man of wide, accurate learning he already is (in Germany and Austria); he must become a man of power, a trustworthy moral guide, a sympathetic human seer. This is the central thought of the entire book.

The socio-ethical training contemplated brings the author into the most modern and suggestive phases of his subject. Leaning somewhat heavily on Foerster's "Schule und Charakter" and Scott's "Social Education," he pleads for deliverance from German educational formalism with arguments sufficiently obvious to the American, but not yet compatible with the rigorous purposes of German social organization.

As already intimated, a clear and often illuminating psychological analysis underlies the treatment throughout. It is refreshing, for example, to find *interest* defined as "nothing other than the pleasure accompanying the satisfaction of the functional needs of the mind," and to be assured that its development in instruction is a matter of the scientific application of certain quite definite principles accessible to any careful teacher, and not dependent upon a mysterious breath of personality which bloweth where it listeth. The "psychological standpoint" receives its deserved emphasis in all problems of instruction, while the very concept of liberal education is built up on the threefold aspects of knowing, feeling, and willing.

With all his progressivism the author balks at many a radical step already being vigorously agitated. Thus he opposes all relaxation of the curriculum in favor of individual election even in *Prima*, and would secure elasticity of adjustment within the class itself. He abides by tradition, likewise, in respect to the clearly questionable religious instruction offered throughout the course. It is but just to say that could it be maintained at the standard which Jerusalem sets for it, it would not be questionable—a wish which to many competent observers appears quite

out of the question however. At these and other minor points the reader may find occasion to differ, but he differs always with convictions arrived at by honest and patient investigation; the issue is never avoided. Always clear, always constructive, and usually convincing, Jerusalem has uttered an invigorating message to the secondary teacher which should reach beyond the limits of the language in which he writes.

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CARNEGIE FOUNDATION,  
NEW YORK CITY.

## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. June, 1913. *La position actuelle du problème de l'hérédité* (pp. 545-567): DR. S. JANKÉLÉVITCH. — The discussions of the problems of heredity are complicated by the continuity of social life, the (unconscious) influence of divergent social and political attitudes. The Neo-Darwinian and Neo-Lamarckian controversy is shot through with misunderstandings of the meanings and differences in the uses of the terms "heredity," "acquired," "innate," and of the rôle to be assigned to "environment" in the history of living beings. *Comment se maintient et se renforce la croyance* (pp. 568-592): J. M. LAHY. — Seeks to explain how man can "take the religious attitude of belief *a priori*, when daily experience contradicts at every instant the doctrines of this belief" by an analysis of tribal collective experience, the rôle of myth, emotion, etc., in primitive cults. *L'essence du phénomène social: la suggestion* (pp. 593-602): R. BRUGEILLES. — Suggestion forms the basis of explanation of social phenomena, and comprises the partial truths of the imitation theory of Tarde, the "constraint" theory, and the "concurrence of thought and activity" theory of Worms. *Un enfant apprend à lire* (pp. 603-629): E. CRAMAUSSEL. — A report, with discussion of errors of method, etc., of observations on the process of a child's learning to read (covering 170 lessons). *Analyses et comptes rendus*. F. Pillon, *L'année philosophique*: JULES DELVAILLE. Vernon Lee, *Vital Lies*: L. ARRÉAT. Paul Natrop, *Allgemeine Psychologie Nach Kritischer Methode; Erstes Buch, Objekt und Methode der Psychologie*: G. L. DUPRAT. Friedrich Boden, *Die Instinktbedingtheit der Wahrheit und Erfahrung*: HUBERT. Varia Kipiani, *Ambidextrie*: G. L. DUPRAT. Raymond Meunier, *Les sciences psychologiques; leurs méthodes et leurs applications*: G. L. DUPRAT. Gustave Monteunis, *La jalousie*: HUBERT. *Revue des périodiques*.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. July, 1913. *L'influence du moral sur le physique d'après Cabanis et Maine de Biran* (pp. 451-461): F. COLONNA D'ISTRIA. — Cabanis maintains a continuity between all the phenomena of life, so for him morality is nothing but the operation of a coordinating function, while Maine de Biran holds this continuity to be broken at a certain point where consciousness introduces liberty and will. *Les principes du calcul fonctionnel* (pp. 462-510):

M. WINTER. — A study in the principles of the evolution of science which aims at throwing into relief the essential ideas of contemporary mathematics and showing their genesis. *Le problème religieux dans la pensée contemporaine* (pp. 511–525): D. PARODI. — An introductory lecture in a series given at L'École des Hautes Études Sociales in 1911–12 by twelve prominent French philosophers. The lecture sets forth the form in which the problem of religion has regained the interest of philosophers to-day. *Sur quelques rapports des Règles de Descartes avec les Méditations* (pp. 526–636): H. HEIMSOETH. — A partial sanction for the idealistic interpretation of Descartes based on the order and the postulates of his thought. *L'École de Chicago et l'Instrumentalisme*: H. ROBOT. *Questions pratiques: A propos de l'article de M. Cantecor sur le suicide: Deux idées de V. Egger*: A. LECLERC. *Supplément*.

Finkelstein, I. E. *The Marking System in Theory and Practice*. Educational Psychology Monographs, No. 10. Baltimore: Warwick and York. 1913. Pp. 88. \$1.00.

Gentile, Giovanni. *La Riforma della Dialettica Hegeliana*. Messina: Giuseppe Principato. 1913. Pp. lx + 306. 5L.

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## NOTES AND NEWS

THE thirteenth annual meeting of the American Philosophical Association will be held at New Haven, Connecticut, on December 29, 30, and 31. The sessions will begin on the afternoon of the twenty-ninth. The subject for consideration in the joint session of the American Psychological and Philosophical Associations will be "The Standpoint and Method of Psychology." The Philosophical Association is this year committed to the discussion of some important problem for two sessions. The question selected for the main discussion is the problem of the "Relation of Existence and Value," including their relation both as facts and concepts, and also the "Relation of a Theory of Existence to a Theory of Value." The stating of the problem in this general way will allow members to present their more specific points of view and to participate in the discussion. Leaders for this discussion will be appointed by the Executive Committee, and announced in the programme for the meeting. It is hoped that members will prepare themselves as much as possible beforehand for the discussion, and will give the main problem adequate and careful consideration. There will be the usual opportunity for a number of papers on various important subjects, titles and abstracts of which should be sent to the Secretary, not later than December 6. Papers are limited to twenty minutes in reading, and abstracts to four hundred words. Membership blanks will be furnished on request, and should be so filled out as to give full information regarding the candidate's qualifications. They should be sent to the Secretary, Professor E. G. Spaulding, Princeton, New Jersey, by December 23.

THE New Haven meeting of the American Psychological Association will be held on December 29, 30, and 31, under the presidency of Professor Howard C. Warren. The main sessions will be held in the Yale Psycho-



logical Laboratory, in Herrick Hall. The programme goes to press on December 12, and all titles should be in the hands of the Secretary, Professor W. V. Bingham, Dartmouth College, Hanover, New Hampshire, by December 10. It is desirable that a brief abstract should accompany the title to aid the committee in arranging a coherent programme. An abstract of each paper, not exceeding four hundred words in length, will be printed in the published proceedings, and should reach the Secretary by December 20. A file of these abstracts will be available at the time of the meetings so that they may be examined by any member in advance of the reading of the papers. The request of the Secretary for samples of examination questions, mimeographed outlines, syllabi, laboratory directions, reviews, and similar aids to teaching has already met with response from several quarters. An interesting and suggestive exhibit will be assured if others will send samples of some of the materials they are using. The Secretary is authorized by the Association to arrange for the payment of transportation charges on new apparatus for research and useful charts and demonstration devices which members may be willing to display. Consignments should be shipped in care of Professor R. P. Angier, Herrick Hall, New Haven, Connecticut.

IN a recent letter, Professor Ernst Haeckel, whose eightieth birthday will occur on February 16, 1914, asks that his friends, of whose intention to celebrate that anniversary he has been informed, will refrain from sending personal donations, and will, instead, send contributions to be placed at the disposal of the German Monists' Union. The development of this Union since its foundation seven years ago and the importance it has gained as an influence making for greater freedom and rationality of thought, render, he believes, its financial support desirable. It is expected that the new "Ernst-Haeckel-Fund for Monism" will constantly further the work of the Union along the lines of natural science. Professor Haeckel's heartiest thanks are sent, in advance, to all his friends and comrades, who by subscribing to this fund, will support the work of his long life. Payments should be sent to Deutsche Bank, Filiale Hamburg, for the "Ernst-Haeckel-Schatz für Monismus," or to Konto No. 7497, Hamburg. Acknowledgments of payments will appear, if desired, in *Monistisches Jahrhundert*, under "Chiffre." All correspondence and questions should be addressed to the "Ernst-Haeckel-Schatz für Monismus," 1 Klein Fontenay, Hamburg 36.

DR. ALOIS RIEHL, professor of philosophy at the University of Berlin, and formerly rector of the University, who recently addressed the officers and students of the department of philosophy at Columbia University, gave two lectures at Harvard University on November 17 and 18, on "Nietzsche" and "Nietzsche and Bergson."

DR. FREDERICK HENKE (Chicago), recently of Nanking University, has been appointed professor of philosophy at Willamette University, Oregon.

DR. J. FREDERICK DASHIELL (Columbia, '13) has been appointed professor of philosophy and education at Waynesburg College, Pennsylvania.

DR. W. K. WRIGHT has been appointed an instructor in philosophy in Cornell University.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### IS "REALISTIC EPISTEMOLOGICAL MONISM INADMISSIBLE"?

For a stranger to try to stop a fight is a proverbially dangerous undertaking; if the would-be peacemaker succeeds in drawing the attention of the combatants, he is more than likely to be punished for his pains by both parties. Our excuse, therefore, for venturing to take part in the controversy now waging between Professor Lovejoy and the neo-realists must be found less in the expectation of making converts to our view from the ranks of either of the parties already in the field than in the mere desire for a "consciousness of kind" and the hope of being able to express, approximately, at least, the attitude of some other readers of this JOURNAL, who, it may be, find themselves fully at home neither in the camp of the neo-realists nor in that of their idealistic and dualistic critics.

Professor Lovejoy, we take it, has scored a point or two in his attack upon the neo-realistic doctrine of illusion, hallucination, and error, and in his criticism of the view that consciousness is an absolutely external relation. And yet it is not so clear, by any means, that any possible theory within the limits of the accepted definition of realistic epistemological monism has been thereby shown to be "inadmissible."<sup>1</sup> What we would defend might perhaps be called epistemological monism and *critical* realism, as opposed to the epistemological monism and *dogmatic* realism of the typical neo-realist. By this we mean to say that the object perceived is existentially or numerically identical with the real object at the moment of perception, although the real object may have qualities that are not perceived at that moment; and also that this same object may exist when unperceived, *although not necessarily with all the qualities which it possesses when perceived.*

It is important to note at the outset that there is no necessary contradiction between Professor Lovejoy's statement that there is *mediate* and yet valid knowledge, and Professor Perry's contention that there can not be knowledge at all, unless there is *immediate*

<sup>1</sup> A. O. Lovejoy, "On Some Novelties of the New Realism," this JOURNAL, Vol. X., page 43.

knowledge of reality. Might it not be that there is mediate knowledge, because, and only because, there is first immediate knowledge? If, as we shall maintain, this much of the neo-realist's thesis is defensible, that in ordinary perception there is immediate knowledge of reality which is not dependent for its existence upon its being perceived, it may also be said, in the light of experience, that we often have repeated immediate knowledge of repeated, essentially identical, independent processes. Indeed, in countless instances we come to be able to predict the later stages of a process of which we have immediately experienced but the beginning. Again, we are often practically certain that a process of which we have immediately experienced only the beginning and the end has been essentially identical with what at other times we have had under our immediate observation throughout its entire course. If, then, we define truth as representation of reality, sufficient for whatever purposes ought to be taken into account in making the judgment in question;<sup>2</sup> and if we define knowledge as sufficient certainty of the truth for all proper practical purposes, it will be readily apparent that if there is immediate knowledge of independent reality in normal perception, there may also be mediate knowledge of independent reality through the processes of thought, and that the immediate knowledge has made the mediate knowledge possible.

Immediate knowledge of independent reality, then, would make mediate knowledge of the same also possible; and it does not appear what else could. Hence it would seem as though, unless realistic epistemological monism can be established as a tenable theory, we should have to face the dilemma of absolute solipsism or absolute agnosticism. Idealistic epistemological monism can not logically escape solipsism. Realistic epistemological dualism can not logically escape agnosticism. Realistic epistemological monism would logically escape both. We must, therefore, raise the question, Is immediate knowledge of independent reality in perception possible?

This question, in the light of the hypothesis which it shall be our present task to develop, we would answer in the affirmative. The epistemological dualist maintains that what we perceive is existentially and in part qualitatively distinct from the independently existing object; it is a second object, at best only somewhat similar to the first. The typical neo-realist tries to hold that what we perceive is existentially identical with the independent reality and also qualitatively identical, to the full extent of the perceptual content; it is not a second, and perhaps somewhat similar object, but the very same object, with no additional qualities due to its being perceived.

<sup>2</sup> This definition of truth is defended in my article on "Representational Pragmatism" in *Mind*, April, 1912.



Epistemological monism and critical realism combine the partial truths of both antithetical positions. Bearing in mind that in the identity, for us, of physical objects, there is a subjective factor (our purposes), and an objective factor (continuity of physical energy and of certain teleological functions other than our own), we would maintain with the neo-realist that *what we perceive is existentially identical with the independent reality*, and with the epistemological dualist we would say that it has, *when being perceived, certain qualities*—notably the sense-qualities—which it does not possess *when not perceived*.

In order to be able to maintain this position it is simply necessary to apply to sensation the view of consciousness which Bergson applies in his doctrine of memory. In passing from perception to memory, according to Bergson, we definitely abandon matter for spirit; memory, importing, as it were, the past into the present, bringing into the present experience what would not otherwise be there, is a creative activity of spirit.<sup>3</sup> Similarly, it may be urged, in sensation there is a creative activity of spirit—or of whatever we may choose to call the psychical subject. Upon occasion of certain stimulations, sense-qualities—particular colors, sounds, odors, tastes, and the like—are creatively produced, and in some cases with more or less accuracy located in or upon the very object in the environment from which the stimulation proceeded. This extension of the activistic interpretation of consciousness to sensation as well as to memory and the higher thought-processes would at least have the merit of getting rid of Bergson's paradoxical identification of pure perception with matter.

But it may also be said that we have here what looks like a solution of the problem of *the nature of consciousness*. For some time this has been one of the most troublesome of our problems. It had long been a commonplace among philosophers that the one impregnable foundation for philosophical construction was the proposition, "consciousness is." But when the question was raised, If it is so certain *that* consciousness is, just *what* is it? the answer was not readily forthcoming. It seemed impossible, for instance, to tell just what additional *quality* objects came into the possession of, when they passed from the state of being ignored into that of being thought of. It was, therefore, asserted that consciousness did not exist as an experienced quality at all. Then it was suggested that consciousness, instead of being a quality, was a peculiar *relation*—a purely external relation, according to some—between physical objects, or else an observable mode of *behavior* of the animal organism. It might be a relation of meaning between objects, or the adaptive behavior of the

<sup>3</sup> "Matter and Memory," pages 80 and 313.

animal organism to its environment.<sup>4</sup> But this dialectic of the attempt to construe consciousness in terms of the purely physical—for which American neo-realism is chiefly responsible—manifestly leads into a *cul-de-sac*. We all know that there is a difference between meaning and the consciousness of meaning, and between any kind of physical behavior and the consciousness which may be associated with it.

There is, however, another dialectic of the meaning of consciousness, a dialectic beginning not with the physical object, but with the psychical subject. For this movement the English new realists are the chief sponsors. It may be epitomized as follows: Consciousness is a *quality* of the psychical subject. But it can not be a quality of the subject, unless it is at the same time a *relation* between the subject and the object. But, again, consciousness can not be a relation between subject and object, unless it is at the same time an *activity* of the subject upon the object. There is a lack of clearness, however, as to the nature of this relation or activity. G. E. Moore and S. Alexander, speaking in the interests of the reality, apart from sensation, of sense-qualities, hold that it is a diaphanous relation between subject and object, a transparent activity of the subject upon the object, whereby nothing is produced to come between the subject and its object. A. Wolf suggests that the relation or activity is diaphanous only in the case of normal perception; that in hallucination and illusion it is a productive activity, sense qualities being produced which have no objective reality apart from consciousness. Now we would reject as unmeaning the concept of diaphanous activity, and interpret consciousness, in sensation and elsewhere, as *productive activity* of a unique sort. The psychical subject, which we may consent with William McDougall to call once more the soul, creatively produces—each individual for itself alone, and on condition of certain stimulations—all the various sense-elements which it is able to discover in the surrounding world of physical objects.

Let it not be objected that in making use of the idea of creation we are reverting to a discredited concept. It is this idea of real productivity which is the original meaning of causality. The real cause is not a mere "unconditional, invariable antecedent," which *does* nothing to anything, but which is mysteriously followed by a mere "consequent," similarly inert. Causation is productive activity. The cause is something which does something to something else, and what it does, what it creatively produces, is the effect. This whole point of view, applied to both psychical subject and physical object, may be called *activistic realism*.

This view of consciousness has the merit of furnishing the solution of several old puzzles. For instance, it enables us to define

<sup>4</sup> See recent articles by Professors Woodbridge and Singer.

psychology, giving to it a subject-matter distinct from that of any other science. Psychology is the science which undertakes to study the psychical subject (the soul or mind) in the light of what it does.<sup>5</sup> It is descriptive of psychical activities.<sup>6</sup> It is not concerned with the sensible qualities of objects, but with sense-qualities as products of psychical activity. But besides sensing, it undertakes to describe apperceiving, remembering, imagining, conceiving, judging, reasoning, feeling, willing—in short, all the activities of the psychical subject. It studies the psychical subject in the light of its activities, and these in the light of their products (sense-qualities, ideas, movements, etc.).

A little reflection will show, too, that this theory of consciousness clears up the philosophical puzzles that have been associated with such phenomena as hallucination, illusion, color-blindness, etc. After-images, for example, are creatively produced on occasion of the continuation of an intra-organic stimulation for a time after the extra-organic stimulation has ceased. The effects of color-contrast are qualities of the object creatively produced by the psychical subject on occasion of the spreading of stimulation from the physiological units originally active to others, with which these particular psychical activities are coordinated. Color-blindness is due to a lack of inheritance of the capacity for certain psychical activities. This incapacity, of course, is physiologically conditioned. In short, the whole process of sensing, *i. e.*, of creatively producing certain sense-qualities in objects of the environment on occasion of certain kinds of stimulation, is to be viewed as the inherited result of what was first achieved in the lower animals from which the human race has descended. Moreover, this consideration throws some light upon the otherwise puzzling question as to whether the colors seen by two apparently normal individuals are qualitatively identical, or whether they are qualitatively different, with *corresponding* differences, simply. Since both individuals inherit their sensing capacity from a common ancestry, it is entirely probable that its products are qualitatively the same, except where there has been a failure to inherit, as with the color-blind. A further side-light upon our theory, and support of it, may be derived from paleontology. It is a well-known fact that the brilliantly colored—or shall we say *colorable*?—flowering plants did not appear—and many extant species would not have

<sup>5</sup> Cf. W. McDougall: "Body and Mind," pages 364-5. The writer's theory of consciousness had been worked out essentially as presented here, before he became acquainted with McDougall's view. His conclusions were also reached in independence of the views of Bergson and Wolf, noted above.

<sup>6</sup> G. E. Moore, rejecting the idea that the psychical subject can give properties to things (*Proc. Aristot. Soc.*, 1903-4, page 135), is consequently unable to make "acts of consciousness" include the entire subject-matter of psychology (*Ibid.*, 1909-10, pages 36-57).



survived if they had appeared—before there were animal forms, such as insects, to be stimulated by their selective reflection of light, and so to clothe them—according to our theory—with gay colors, by means of which they might be guided to them, sustain themselves with their honey, and incidentally assist in their pollination.

The further exposition of epistemological monism and critical realism leads us to speak of the distinction of primary and secondary qualities. In the light of scientific progress Locke's list of the primary qualities of physical objects needs revision: but it is in connection with the production of the secondary qualities that the sharpest deviation from the Lockian philosophy is necessary. Sense-qualities are not produced by external things and lodged in a passive mental receptacle, as Locke thought; they are creatively produced in things or in the individual's own body by the activity of the subject. The mind does not passively *receive* impressions, but, as we shall see, actively *takes* impressions of surrounding objects by means of sensation and thought. Sense-qualities are private marks, learned involuntarily by the animal race and inherited by the individual and placed by him upon environing objects in a series of inherited and involuntary, but creative psychical acts: with the result that a more favorable adjustment to the situation than could have existed without it is made possible.

The secondary qualities are created, and thereby the primary qualities are *revealed*. Through being clothed with the secondary qualities of sense, material things with their primary qualities, their spatial and temporal location, their comparative extension in space, and duration in time, the quantity, distribution, and transformations of their energy, and so on, are made available for human knowledge. What is of special importance here for epistemological theory is the insight that where sensible qualities are located in the external object, rather than in the body of the subject, some of the primary qualities, such as shape, relative size, location, are as directly present to the subject as are the secondary qualities themselves. It is this circumstance which makes possible the escape from absolute agnosticism, and makes it possible to hold to a realistic epistemological monism. Primary qualities are transcendently real; but some of them are sometimes empirically real, and this circumstance makes all the difference between helpless total ignorance of reality and knowledge capable of almost unlimited progress. The thing-in-itself is knowable in part: we are practically certain that things exist with their primary qualities, even when they are not known by any human subject.<sup>7</sup> If any one should be inclined to quibble over the question

<sup>7</sup> The question of the possibility of knowledge of the thing-in-itself is the question of finding qualities in the thing with reference to which the relation of

as to whether, even on this theory, any primary qualities are *immediately* known, since it would always be by *means* of secondary qualities, the reply is that the perception of these primary qualities is *practically* immediate: it is clearly distinguishable from knowledge of qualities not thus present, such as may be gained through memory or inference. It would be equally possible to maintain that secondary or sensible qualities are known by means of primary qualities, since their existence is made possible only through the presence of primary qualities; or that neither primary nor secondary qualities are immediately perceived, since they are perceived by *means* of psychical activity.

For the sake of completeness at this point it may be further said that the qualities of physical objects are not exhaustively classified as primary and secondary; there are what may be called tertiary qualities also. Primary qualities are those qualities of physical objects which are discovered through sense-activity, but not produced by it. Secondary qualities are discovered in the object only because produced and put there by the subject of sense-activity. By tertiary qualities we mean such qualities as neither exist in the thing prior to the psychical activity of the subject nor are the immediate product of sense-activity; they are placed in the object, not by sense, but by the purposive activity of the subject. Or, more briefly, primary qualities are found by sense and thought; secondary qualities are made by sense and found by thought; tertiary qualities are made by thought. A name given to an object for the first time, or any original and purely arbitrary predicate which may be attached to it without error will serve to illustrate tertiary qualities.

The distinction between tertiary qualities and ideas of primary qualities is important. Objects are complexes of primary, secondary, and tertiary qualities and relations, and not of ideas of these. An idea is a representation, a proxy re-presentation of an object, or of some quality of an object, or of some relation between objects or relations, functioning vicariously for the presence, the actual presentation, of the object or quality or relation in question. Ideation, the production of these ideas, is a creative psychical activity. In being either perceived or thought of is external. By thing-in-itself is meant here not the thing as it is when not in any relation whatsoever; that, of course, is an *Unding*. By thing-in-itself we simply mean the thing as it is when neither perceived nor thought of by any human being; or, to say what amounts to the same thing from the point of view of realistic epistemological monism, it is the thing as it is, whether perceived or not, and whether thought of or not, by any subject, human, infrahuman, or superhuman. Existence outside of all relations and existence without dependence upon being the object of perception or thought, can be identified only on the assumption that all relations are the work of thought. What we maintain is that it is not necessary to assume this.

attentive analysis of the presented object thought-elements are brought into association with the qualities of the object, and thus the way is prepared for the production, when the object is no longer immediately present, of ideas or representations of the object, or of some of its qualities, either primary or secondary or tertiary. Now it may happen on a later occasion, when the same object is again sensed and thus presented, that some of these ideas of qualities may function instead of the actual presentation of those qualities. In so far as this is the case, the psychical activity is apperception. Now this apperceptive activity may, in familiar situations, very largely anticipate attentive analysis, thus rendering it unnecessary; and it would even seem that the more general types of this originally acquired apperceptive activity, or the instinctive tendency thereto, may be transmitted from generation to generation.<sup>8</sup> The Kantian "activity of the categories" is instinctive apperceptive activity. Kant's doctrine of a "transcendental unity of apperception," imposing upon the object a unity which it would not otherwise possess, is, from this point of view, largely false and much too simple. There is a discoverable unity in all active things, and this unity already existent may be represented in an anticipatory way by that instinctive apperception which was itself originally the result of sense-activity and attentive analysis directed toward other unitary objects. The only unity imposed upon the object by the psychical subject is a tertiary quality, the unity which a more or less complex content acquires by virtue of its being related to some interest or purpose as end, as obstacle, or as means.

There are thus various degrees of apriority in the apperceptive activity involved in the perception of objects, from what is most universally inherited to what has been most recently acquired by the individual: but in no case is this an absolute apriority. It is always in the last analysis the result of experience. And yet, on the other hand, since we do not interpret sense-experience as passively received, but as actively produced by the psychical subject, our doctrine of the only relatively *a priori* character of the ordinary formal, "relating" activity involved in perception is very far from lapsing into the old empiricism. Ours is an activistic empiricism; all sense-activity is creative activity with reference to the qualities of the object, and all thought-activity is creative of ideas and their associations, while some thought-activity is creative of tertiary qualities of objects. But, more than all this, whenever a new kind of psychical activity has appeared in the history of the race, whether it be the production of a new sense-quality or the formation of a new idea, we

<sup>8</sup> The recent works of Eugenio Rignano and Richard Semon show that "the inheritance of acquired characters" is still a very live hypothesis.



have psychical activity which is *absolutely a priori*. It is not, as Kant seems to have thought, the old and universal in the way of mental activity that is absolutely *a priori*; rather is it the new, the original and unique.

Some further contrasts between the theory defended here and the Kantian doctrine may also be pointed out. Our theory is the opposite of Kant's in that it regards the primary qualities of the object not as the contribution of the subject, the product of its relating activity, but as furnished from the objective side; while the secondary qualities are regarded, not, with Kant, as the contribution of the object, or better, of the supposedly unknowable thing-in-itself, but as the contribution of the sense-activity of the psychical subject. Moreover, from this point of view analytic judgment becomes relatively more important than in the Kantian system. Analytic judgments, when directed toward things and not toward ideas simply, are productive of new information. The only judgments which are synthetic with regard to things are those comparatively unimportant judgments through which there are added to objects their comparatively unimportant tertiary qualities.

Finally, it may be noted that, with the solution, here given, of the fundamental problem of epistemology and of metaphysical psychology, the way is opened up for the solution of what is the same problem in its most generalized form, *viz.*, the problem as to *the internality or externality of relations*. We have found that what the object is depends largely upon whether it is sensed or not; many of its qualities thus depend upon its relation to the conscious subject. But these qualities may, for some particular purpose, be of no importance whatever, and in such a case the knowledge relation is external to the object. Generally speaking, the knowledge-relation, when it is a relation of present consciousness, is internal so far as the subject is concerned, and external so far as the object is concerned. That is, for most purposes one may ignore the difference made in the object by its being known and thought of by oneself or others, whereas knowledge is not likely to be sought, or even recalled to mind, unless there is felt to be a practical difference between the subject with and the subject without the knowledge in question. When the knowledge-relation is *not*, however, at the same time a relation of present consciousness, for most purposes it makes no difference to either subject or object; it is an external relation. But, on the other hand, there is probably no actual relation which might not become important for some conceivable purpose; in which case it would become internal to one or more of the terms related. Whether relations are to be regarded as internal or external to the terms related thus depends upon the purpose with reference to which the question

is raised. Theoretically there is no relation which may not be either internal or external. The *existence* of relations does not commonly depend upon purpose, but the internality or externality of those relations does. In any particular situation, for the present purpose of the subject most of the object's actual relations are external. The doctrine that all relations are always internal to all the terms related could only be maintained by establishing the existence of a knowing-willing subject for which all conceivable purposes—even the most trivial and the most mutually contradictory—were always being purposed and never reaching fulfilment. But no such "mad Absolute" can be rationally supposed to exist, so that there must, from any actual point of view, be *some* external relations.

If any contribution shall be found in these pages toward the peaceable settlement of the controversy between the epistemological dualists and the neo-realists, it will be due to the extension of the conception of creative psychical activity to sensation, and to the perhaps more than ordinary dependence upon considerations of purpose in the solution of philosophical problems.

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### IS PSYCHOLOGY EVAPORATING?

THOSE keen and serious thinkers who are upholding the view that consciousness is merely a relation between objects will, without doubt, be glad to have their attention called to certain points in their contention that seem obscure to one who still finds himself remaining among the unconvinced; and they will pardon me if, in bringing forward these points, I refer at the start to certain very elementary facts.

#### I

When I waken in the morning there at once begins a stream of appreciations of the existence of what we in thoughtful reflection come to call objects in the outer world: the chair, the table, the fireplace, etc.; and this stream of appreciation of objects in the outer world continues during my waking hours. Taken collectively they form what in the interest of brevity I shall speak of as the natural order.

But occasionally in addition to this stream there are discovered items which are felt to be of a different order from this natural order. When I step close to the fire I appreciate the existence of warmth. When I do not find my newspaper at the breakfast table I appreciate the existence of desire. When I read in the newspaper of some new perpetual-motion machine I appreciate the existence of disbelief, or

belief in the opposite of what is stated. The three items, warmth, desire, belief, may be taken as typical of innumerable instances of these appreciations of existences which do not seem to belong to the natural order, and which are usually grouped together as items within what we may call the mental order, or what is usually spoken of as consciousness.

Now, if I understand the thesis presented by Professor Woodbridge,<sup>1</sup> which in its main lines is followed by those whose views I am concerned to discuss, we are told that each item within this mental order, *e. g.*, this warmth, this desire, this believing, is in each case nothing other than the appreciation of a special relation between objects in the natural order.

It is true that if one takes a special position the word object may not necessarily apply only to the natural order. It may then be applied to "thoughts" in the mental order as well as to "things" in the natural order, which William James declares<sup>2</sup> "are names for two sorts of objects." But evidently this particular use of the term object is not intended by Professor Woodbridge, as is indicated by the concluding remarks in the article cited above;<sup>3</sup> and by his comparison between consciousness as a relation, and the spatial relation; for space is a concept which obviously has to do with items in the natural order, and not obviously with items in the mental order.

Taking it for granted then that by objects Professor Woodbridge means existences in the natural order we may note that there is much evidence, in the labor given to the elaboration of the arguments in favor of this statement, that the thesis does not at once appeal to the average thoughtful man as self-evident, or even as comprehensible; and he is likely to ask for some fuller explanation of its meaning.

It may mean, I take it, that we gain such a conception if we assume the ultra-objective attitude which might be gained by a superhumanly wise spirit, from Mars, let us say, who observes the objects in the outer world, and me among these objects; and who observes also a certain relation existing between my nervous system and the fire, and tells me it is that relation I call warmth; or a certain relation existing between my nervous system and the table without its newspaper, and tells me it is that relation I call desire; or a certain relation existing between my nervous system and the print on the newspaper, and tells me it is that relation I called belief.

Our Martian spirit might thus tell us, apparently, that what we call consciousness, and ignorantly place in another than the natural order, is for him really in the natural order; and he might go so far

<sup>1</sup> "The Nature of Consciousness," this JOURNAL, Vol. II., pages 119 ff.

<sup>2</sup> "Essays in Radical Empiricism," page 1.

<sup>3</sup> *Op. cit.*, page 124.



as to say that Professor Montague is justified in holding that what we call consciousness is in space, as all other items in the natural order are.

If consciousness is naught but a relation between objects in the natural order, it seems to me that our Martian spirit could not but describe the situation as Professor Woodbridge presents it; and I am inclined to think that it is only by imagining ourselves as taking such an ultra-objective view that the thesis can be maintained. But if this is the meaning of the thesis, it seems to me to be one that has no evident significance for us as living men. For it is only by a precarious flight of imagination that we can even approach to such an ultra-objective attitude as that of our supposed spirit from Mars; and I do not think we can approach sufficiently near to it either to affirm or deny that such an observation made by him is correct.

We might well, however, say to our Martian spirit that although we can not gain his complete detachment from mundane things, and can not for a moment claim to have his full vision as to the nature of existences; nevertheless, we do feel that, if our vision is in any manner to be compared with his, we ought by careful study and observation to be able to observe objects in the natural order, and the relations between them, somewhat as he does; and if so, we ought to appreciate, as we clearly do not, the warmth when our neighbor approaches the fire, the desire when he finds no newspaper on his breakfast table, and the belief when he reads the matter in his newspaper.

James, in the essay from which I have quoted above, was concerned to establish a monism which is prior to both the mental and natural orders. He says<sup>4</sup> "my thesis is that if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff pure experience," we reach such and such results. But of course it can not be the intention of those who uphold the relational view of consciousness here considered to argue in favor of a monism of this nature. For them, if I understand them, the objects are existences quite apart from, and diverse from, the relation between them, of which the appreciation of items in the mental order consists. In fact, I take it, it is, under this view, this very diversity of nature that leads us to differentiate the mental order from the natural order; and we thus appear to be forced to accept a dualism which was far from the thought of James, for whom "pure experience" was the "primal stuff," . . . knowing being "a particular sort of relation toward one another into which portions of pure experience may enter: . . . the relation itself" being "a part of pure experience."

The question which arises in my mind is this: if we discard the

<sup>4</sup> *Op. cit.*, page 4.

ultra-objective and thoroughly artificial point of view above described as that of the spirit from Mars, and if we do not follow James's view which makes "thoughts" and "things" equally significant items in pure experience, what is meant by the relational theory? The relation is diverse from the objects; what are these objects of which the relationist speaks so lightly? His language would lead us to hold them to be self-evident existences apart from the consciousness relation existing between them which we appreciate at some times, and not at others. But what is the nature of these objects, and how do we appreciate their existence at all? I ask for light, convinced from the very glibness with which this existence is asserted that these objects can be described in terms which do not involve the consciousness relation; and that some *modus operandi* of the appreciation of their existence, altogether apart from consciousness, must be known to the supporters of this theory.

## II

A further question arises in my mind in relation to Professor Woodbridge's contention that we are unwarranted in our belief in the existence of sensations,<sup>5</sup> the logic of which would seem to force him to question the existence of all items in the mental order, and of the mental order itself.

In the article in which he makes this contention he says much<sup>6</sup> which gives it the appearance of being an attack upon the atomistic view that "consciousness is a complex of elements such as 'sensations,' or 'mental processes'"; and in this I fully sympathize with him. But, although this is a view that still to some extent dominates current thought in psychology, it is one which should really be treated nowadays as a man of straw unworthy of attack; for as Stout has said,<sup>7</sup> "J. S. Mill has virtually confessed its bankruptcy in his doctrine of 'mental chemistry.'" As most masters in psychology to-day look upon it, the consciousness of each moment is a complex indeed, but not a complex of atom-like mental elements. It is a complex of diverse emphases within a whole psychic pulse; and, so far as these emphases display observable characteristics, the average man gives them special names; *e. g.*, "thoughts," "desires," "believings," "emotions," "sensations," etc.

But Professor Woodbridge's contention, of course, steps far beyond this point of opposition; and he raises questions concerning which I again would seek light. He tacitly acknowledges in the very title of his article that there is an existence which we appreciate in

<sup>5</sup> "The Belief in Sensations," this JOURNAL, Vol. X., pages 599 ff.

<sup>6</sup> *Op. cit.*, page 600.

<sup>7</sup> "Manual of Psychology," page 110.

what we call the act of believing. Now this "believing" is clearly not naturally placed in the "natural order," but is naturally placed in that special order which we call the "mental order," together with "thoughts," "desires," "emotions," etc. Again the warmth of the fire is much more naturally placed in this "mental order" than in the "natural order"; and still again this warmth is so closely related with sight, and sound, and touch, etc., that it is commonly held to be groupable with these latter as one of a number of sensations. It would seem, therefore, that the arguments used to show that our belief in the existence of sensations is unwarranted should be applicable to warmth among the sensations; and as this warmth is so closely bound to all other items in what we call the "mental order," the arguments would seem to be properly applicable also to "thoughts," "desires," "emotions" and "believings." If this is so, it would seem that Professor Woodbridge might throw light upon his mode of thought if he would write another article to show that "the belief in believing" is unwarranted. If he attempted to do so, would it not appear that in the very act of expressing his view he would be acknowledging the existence of that which he would claim has no existence?

### III

A further question is raised in my mind by Professor Woodbridge's approval of the very modern notion that "'behavior,' but not 'consciousness'" is "the thing which the psychologist does as a matter of fact investigate." And he states his agreement in this view with Professor E. L. Thorndike, and with Professor John Watson, the latter of whom says that he believes a psychology can be written in which we should "never use the terms consciousness, mental states, mind, content, introspectively verifiable, imagery and the like."<sup>9</sup> In this he exemplifies a marked tendency of the moment. Professor Pillsbury defines psychology as the "science of behavior," although apparently more to show his sympathy with this tendency than to limit himself as Professor Watson would do. And even the eminent Professor William McDougall's latest work is entitled "Psychology the Science of Behavior." Dr. McDougall, however, regards behavior and consciousness as correlatives, and asks his reader to study behavior in order that he may interpret the "purposive action" of his fellow men, and of other living beings, using "what knowledge he can gain of consciousness to aid him in such understanding of behavior";<sup>10</sup> and this is, of course, far and away

<sup>8</sup> *Op. cit.*, page 602.

<sup>9</sup> "Psychology as the Behaviorist Views It," *Psychological Review*, Vol. XX., page 166.

<sup>10</sup> "Psychology, the Study of Behavior," page 19.



from the position of Professor Watson which Professor Woodbridge approves.

Now I am much interested to understand how this latter position can be maintained. It is easy to see, in this demand that psychologists turn from the study of consciousness to the study of behavior, a mark of the *zeitgeist* which leads men in our time to emphasize so strongly the importance of action. Moreover, I am ready to agree most heartily that such men as Professor Thorndike and Professor Watson are engaged in founding a new science of behavior which not only promises important results, but which is already giving us points of view which are most significant, especially in relation to ethics.<sup>11</sup> I can readily see, also, that men of a certain temperament who have begun as, and who still call themselves, psychologists may become dissatisfied with the slow advance made in this field, and may feel it best to abandon it, and to undertake the investigation of behavior in which their special talents will yield more immediate effective result. But it seems to me that the identification of this study of behavior with psychology involves an astounding confusion of thought.

The study of behavior is a thoroughly objective science; just as thoroughly objective as the studies of anatomy or physiology or embryology. It might be undertaken by our inquisitive spirit from Mars without any knowledge whatever that human beings appreciate existences in what we call the mental order.

That there are such existences of the mental order type, which are appreciated by human beings can, however, not be questioned; nor can it be questioned that it is quite natural, and presumably legitimate, to group these existences together in what we thus call the mental order. Furthermore, from time immemorial it has seemed worth while to some of the most powerful thinkers among men to investigate the nature of, and the relations between, these existences within this mental order. And this is what has for long been described as the study of psychology.

Now it is open to any one to hold that this study is futile and unimportant. That is a matter of opinion; which we can not feel to be well grounded, however, when we consider the long array of masterful thinkers who have not considered the study of psychology, as thus defined, to be either futile or unimportant. But to hold that the science of behavior is really what psychology ought to aim to develop seems to me to be a thoroughly unwarranted view, and one which must lead to serious loss to both psychology and the new, and very evidently valuable, study of behavior.

So serious does this loss appear to me likely to be that I find

<sup>11</sup> Cf. McDougall's "Social Psychology."

myself wondering whether, notwithstanding my careful attention to their written words, I can have grasped the meaning of these talented and serious men who make the contentions here referred to.

So here again I ask for light. What is the real meaning of this contention of those who apply to themselves the barbarous term "behaviorists," and who claim to be the only real psychologists.

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### THE BELIEF IN CONSCIOUSNESS

THE recent article by Professor Woodbridge<sup>1</sup> questions the validity of sensation as an introspectible datum in psychology. Such a query is equally applicable, is it not, to the other alleged elements of mental life, *viz.*, images and feelings? If, as he intimates, an introspective psychology is perhaps not worth serious consideration, does not the ultimate question then become, Is the commonly accepted notion of consciousness tenable?

"Is it proper to distinguish consciousness from what we are conscious of?" he asks. Yes, I answer, but not by virtue of introspection. Introspection gives me "conscious of-ness," never consciousness. That we can introspect upon consciousness, *quâ* conscious, appears to the writer only as a curious illusion, still obsessing the minds of many otherwise clear thinkers.

Observation consists in the awareness by a sensori-motor arc *A*, of some external exciting object, for instance, a red-something. This is not a sensation—yet. Such awareness is not "conscious," but physiological, and is analogous to the reaction of any other irritable tissue upon stimulation, say that given by a nerve-net (peristalsis). Introspection-process differs from such awareness-process in that a new process *B* now becomes "aware" of the original, and prior process *A*. But process *B* is still "unconscious" of itself. "Consciousness" enters to affect IT only when some third path, or neural process *C*, takes it for its object. We may then distinguish "consciousness" from "consciousness of" in that in the former case our object is a personal brain path possessed by our individual nervous system, while in the latter case the object is an excitant external to the nervous system experiencing it, and common to all experiencing nervous systems.

Confusion is compounded, especially since James's emphasis of the term, because we are wont to consider "awareness" a mental rather than a physiological expression. Awareness of an awareness; awareness, that is, on the part of process *B*, of process *A*, constitutes

<sup>1</sup> "The Belief in Sensations," this JOURNAL, Vol X., page 599.

what should be meant by the term *consciousness*. But since *B* is never, nor can it possibly become, aware of itself, we are never introspectively conscious. Introspection can make us aware only of some prior physiological disposition, never of an object or thing. Consciousness in the naïve view is then an illusion. The term ought to designate an (unconsciousness) awareness of one's own nerve processes, nothing more.

Suppose that ether vibrations release energy in the retina, and that the impulses engendered complete a sensori-motor arc through the various lobes and Rolandic area to some muscles or gland. And suppose that just so soon as this instantaneous process were complete, neural activity ceased. We should be helplessly unconscious of any change. Nevertheless, reaction has been made; the motor path has adapted the organism to the new stimulus, just as the pupillary reflex adapts the iris. Now in our sensing of the term, the iris is "become aware" of the light stimulus. Until the light again shifts, however, its nerve paths are doomed to inertia. The iris waits upon a further stimulus; it lacks an ability to become aware of its own recent experience. In the higher centers, on the contrary, we have a different situation. There, apparently, the possession of refined association areas allows one part of the cortex tissue to act as stimulus to another part. Path *A* may take cognizance of the light, but path *B* may then be aroused to take cognizance of path *A*. To our mind this latter is what, and is all, that we can properly mean by consciousness.

In view of this I prefer to use the terms suggested in an earlier paper:<sup>2</sup> *consciousizing process*, in lieu of the much-overweighted one, "consciousness." A consciousizing process would be then demarked as a nervous process that takes for its own object an immediately preceding nervous process, rather than an external excitant, or even some process hypothetically synchronous. So regarded, a sensation is not quite the "first thing in the way of consciousness," but the second. The first is a (physiological) awareness-process. Hence, there must always be two physiological processes successive in time for us to be able significantly to call one of them "conscious," or better, "a consciousizing process."

A consciousizing process involves, if we use a stock term, reflection. If experience were cinematographic, one neural process disappearing before the second appeared, consciousness of any sort would be impossible; though the organism might, as lower-level organisms do, still adapt itself to an environment both complex and changing. The "warm experience" that we cherish as pure consciousness appears upon analysis to be illusory. Its warmth is indeed

<sup>2</sup> "Can Biology and Physiology Dispense with Consciousness?" *Psychological Review*, Vol. XIX., pages 246-252.



explicable: it is the awareness of a process just past. But the realization of the warmth demands still for its consummation a separate, detached, unconscious (in the usual sense), neural path, as yet as unaware of itself as the iris is of its reflex.

If the result of the activity of path *A* is to give me red-awareness, the result of the functioning of path *B*, is to give me the sensation. When I then affirm that I experience the sensation of red, I mean that a nervous impulse has passed through my cortex, and that, further, a second nervous impulse has immediately after taken cognizance of such a passage.

May one not from this point of view attempt to answer some of Professor Woodbridge's queries?

"Must we conclude that colors are sensations?" Colors are sensible irritants in that they can arouse neural pathways that may become objects of a consciousnessing process. The variety that we find in consciousnessing processes is dependent upon variety in the exciting object. A blue object, for instance, instead of a red one, will give a unique primary *A*-path, and so a unique object for the consciousnessing process. The mere process of *B* sensing *A* is, as a process, always identical, whether *A* be a reaction to auditory, visual, olfactory, or whatever kind of stimulant. Sensation is always the same sort of thing. Sensations are various only because differing objects arouse characteristically differing neural paths.

"To say that the mental and physical worlds are parallel . . . does not solve the problem." They are not parallel—in time. That we naïvely think they are is an illusion. But so far as process *A* is identical with any previous *A'*, and the consciousnessing process *B* involves certain nerve paths and no others, we find identity of experience: we may repeat the same experience. Illusions and hallucinations mean simply that the same object finds either path *A* or path *B* somewhat out of normal working order. Relativity of sensations is due to the essential subjection of neural paths to the varying conditions of tonus, blood-supply, etc. Either path *A* or path *B*, or both, may be influenced by the fact that we have not had dinner.

"How can a conscious process know itself?" It never can, immediately. But (unconscious) *B* may become aware of *A*. This situation of *B* becoming aware of *A* is what we mean, or should mean by consciousness. This is the whole story, is it not?

"How is identification by memory possible if no state of mind was ever conscious of itself?" Suppose that process *A* is repeated. It becomes then possible for the subsequent process *B* to view both it and its prototype *A'* now again in activity, comparing the two, and either identifying or contrasting them.

"When we dream, do we see colors?" Dreams appear to offer no

problem beyond these discussed. When any neural path in sleep gets into sufficient activity to arouse the depressed activity of the higher centers (*B*-paths), we get the same sort of consciousness process that we do in waking hours, minimally intense. Between the consciousness processes of deep sleep and that of any waking moment the difference is one of degree only.

There are, from our point of view "states (or better, processes) of consciousness, as such," if we agree to mean consciousness processes as yet unaware of themselves. One may indeed *sense a pain*, but not directly. The thing actually sensed, in our phraseology, is the nervous impulse released by the pain-dealing stimulant. Consciousness, or mind, is not made up of "colors, sounds, tastes, smells, and the like," nor yet is it made up of the physiological counterparts of auditory, visual, and olfactory objects, but the mind is the sum-total of the reactions, or awareness, on the part of processes *B*, *C*, *D*, etc., of processes *A*, *B*, *C*, etc., respectively, just prior; these latter processes themselves being aroused by actual objects in the world, or neural memories of such objects (images).

Professor Woodbridge is quite right. Introspection does not disclose the existence of sensations (primary consciousness processes). It never can in the nature of the case. It can disclose, as he affirms, only the existence of things sensed, or more strictly phrased, of neural paths that stand for red, and sweet, and pain, which we subsequently project as objects.

As psychologists we shall hold to the term sensation, and other terms of its ilk, since we can justify their existence as *Eigenartigen*, even while we disbelieve the naïve view usually taken of them; and also for the further reason that they offer the simplest classification of data that otherwise, being personal and individual, scarcely could be classified in understandable common categories. A sensation of red for me is different, undoubtedly, from a sensation of red for you. But of necessity we agree, for the sake of our discipline, mutually to overlook the divergencies, and talk about red in pragmatic fashion, only correcting our "sense-reports" to harmonize them with practical demands.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Problem of Religion.* EMIL CARL WILM. Boston: The Pilgrim Press. 1912. Pp. xii + 240.

Historic idealism has to its undoubted credit certain major demonstrations as against a crudely material or mechanical view of the world. If one wished a plain statement of these salient achievements so far as they

subserve religious faith, this book could be recommended to him. It is not controversial in the contemporary sense, and all subtler critical issues are intentionally deferred in the interest of simplicity.

The "problem of religion" reduces, for the author, to a question of theory: "the only valid source of religious truth is philosophy." The contributions of social tradition and of intuition to religious knowledge receive scant recognition in comparison, for example, with their place in Royce's "The Sources of Religious Insight." Philosophy as here understood summarily excludes revelation or authority in any historic sense. On the other hand, philosophy does not dispute the field of knowledge with causal explanation: the author does not feel called upon to find chinks of incompetence in scientific methods to make room for his metaphysics.

After the causes, the interpretations. In the chapters on "Optimism and Pessimism" and "The Shadow of Death," we find that this interpretative process tends to become a rather tentative weighing of probabilities and prospects. Here the spirit of classic idealism is decidedly relinquished in favor of more experimental modes of thought, and even an occasional confessed reliance on temperament for the form which belief assumes. There are no certainties. The prophet represents not the stern assurances of religion, but its appeal to imagination, its poetic sentiment. "Thus does all our philosophy end in a minor chord, leaving us with a vague sense of uneasiness, mingled with a prevailing mood of strength and hope." One could wish that philosophy need not end here.

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## NOTES AND NEWS

The title of Mrs. Christine Ladd-Franklin's paper read at the meeting of the New York Branch of the American Psychological Association in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences, on December 24, was incorrectly announced. The subject of her paper was "The Newly Discovered Dichromatic Color Sense of Bees, and Some of Its Logical Implications."

Dr. John Pickett Turner, instructor in philosophy at the College of the City of New York, has been made assistant professor of philosophy in that institution. Dr. Turner was formerly assistant professor of philosophy at Vanderbilt University.

The Herbert Spencer lecture was delivered at Oxford University by Professor C. Lloyd Morgan, F.R.S., professor of psychology in the University of Bristol, on Friday, November 7. The subject of his lecture was "Spencer's Philosophy of Science."

Professor Etienne Boutroux, of the University of Paris, and the Hon. Bertrand Russell have been appointed Woodward lecturers at Yale University.



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